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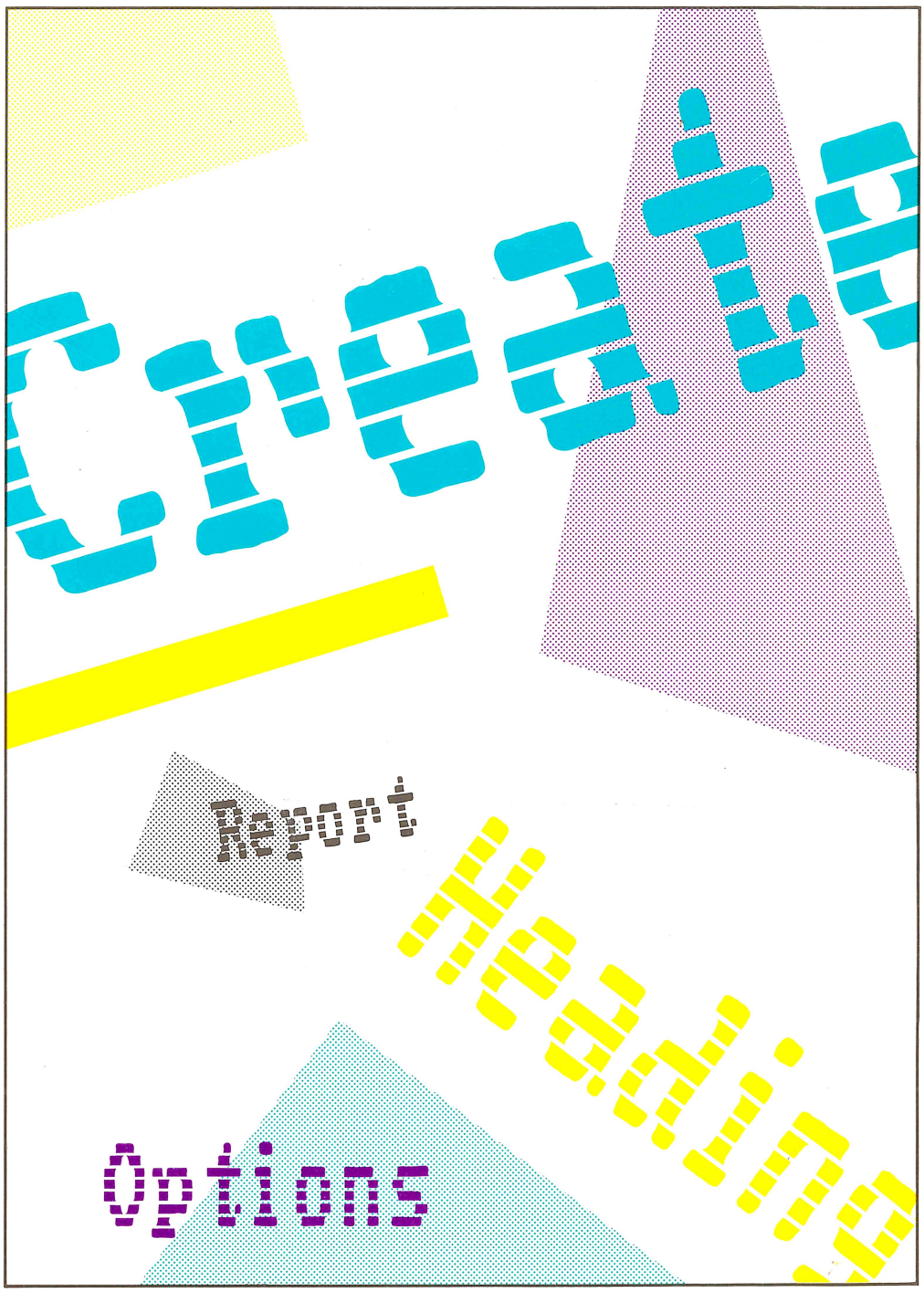
TechNotes

- Reporting in dBASE III PLUS
- dBASE III PLUS Change Summary —Part One
- Framework II Screen Drivers
- SUPERLoK Notes
- New! International Support



ASHTON-TATE

TechNotes

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READ ME FIRST

by Laurie Miller

Welcome to another full issue of ***TechNotes***. Our featured article this month is Paul Bukaukas and Christopher White's "Custom Grouped Reports in dBASE III PLUS." This is the first in a series of articles on custom reporting. In the next several issues we will be presenting a number of articles that demonstrate how to program most report types common to business. Look for articles on programming invoices and snaked-column reports. Also this month we have another article on reporting: "Converting a Format File to a Simple Form Report," by Mike Hedblom. This article provides a simple and convenient method of transforming an input screen into a report to the printer.

Another hot item inside this issue for our dBASE III PLUS readers is the "dBASE III PLUS Change Summary—Part One." Unlike past Change Summaries that Software Support has published, this one presents anomalies, reported in ***TechNotes***, which existed in version 1.1 and the Developer's Release, that were fixed in dBASE III PLUS version 1.0. The Change Summary will be published in four parts. This first part covers fixed anomalies reported in the July 1985 through October 1985 issues. Next month we will publish those that were reported in the November 1985 through January 1986 issues.

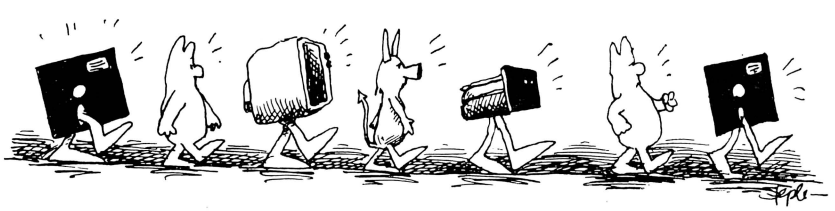
For our Framework II readers we are featuring a terrific article by our new ***TechNotes*** technical writer, Karen Robinson: "Framework II Screen Drivers." Karen's article provides a thorough and complete discussion of which screen driver to choose and how to use color to achieve the effects that you want.

As promised last month, you will find the latest "SUPERLoK Notes" in this issue. We publish this information to help you understand any error messages that you may receive during installation/uninstallation of Ashton-Tate products. The "SUPERLoK Notes" also provide information on various hardware configurations and how SUPERLoK performs on them.

A new monthly department, **International Support**, coordinated by Paul Bukauskas, will contain technical information pertinent to our foreign subscribers who use international versions of Ashton-Tate products. This month you will find the addresses of our subsidiary offices overseas. Contact one of these offices for local update policies and other technical support news that is not covered in **International Support**.

MultiMate Technical Support: This month's MultiMate department contains two excellent sources of technical support for MultiMate users. First, there is "MultiMate Magic," a series of "WHAT IF..." situations that you may find yourself in and tips on how to resolve them. Second is "MultiMate PC Questions," which are common support questions with answers.

I hope you enjoy this issue of ***TechNotes***.



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Custom Grouped Reports in dBASE III PLUS

by Paul Bukauskas and Christopher White

The dBASE III REPORT FORM is a marvelous tool, but at times your reporting objectives may require more flexibility. The REPORT FORM is limited by the number of groups you can define, and does not support a number of statistical capabilities such as averaging or standard deviation. To define more complex reports requires programming, and that is what this article is about. Learning to program reports, however, is not the laborious and stressful exercise that you may think it is. You can learn to create programs that have utility and at the same time create templates that can be used over and over again.

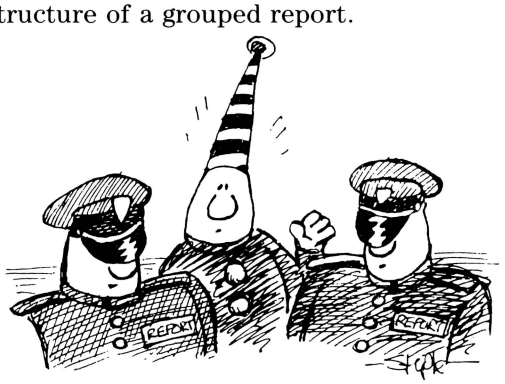
The following discussion demonstrates the basic formatting elements of a grouped report, the programming structure to create one, and an example that you can work from. We will focus here exclusively on creating grouped reports. In a later article, the techniques for adding statistical capability will be explained.

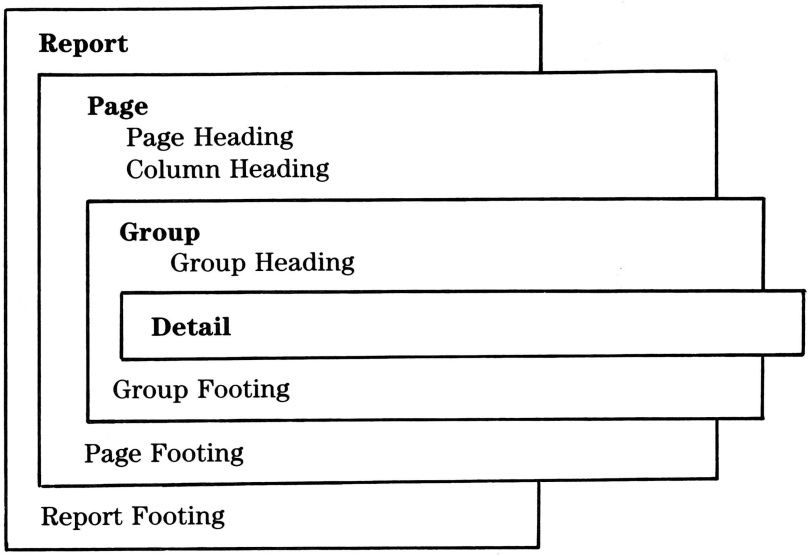
Theory of Grouping

Overview

A grouped report is based on the idea of grouping. On an intuitive level, this is obvious. Like things are grouped together to enhance meaning and understanding. It is the definition of groups and the behavior of the display mechanism that causes difficulty.

Viewing it most generally, a grouped report is a report made up of several levels of subgroups. It is a hierarchal structure that you can imagine reflected in the diagram below. The report itself is the highest level of grouping. You want, for example, to report all records in the data set. The next level of grouping is the page. A new page is printed each time a line counter exceeds the number of lines you have defined as your page length. The third level of logical grouping is the first level of actual record grouping. Here you group by a change in the value of a key. Naturally, subsubgroups are grouped by a secondary key. At the lowest level of record grouping you print the actual detail record information. This is the basic structure of a grouped report.





Because a report conveys meaningful information, each time you encounter a group you want to print information pertinent to that level of grouping. This information usually falls into two categories: identification and summarization. From your perspective, identification could be a group heading that shows the value of the key for the current group. Summarization, likewise, could be a total or subtotal for a number of fields in the current group.

To facilitate this identification and summarization process, each level of grouping is defined with several attributes. A group's attributes are defined to be one or more heading lines, a subgroup, and one or more footing lines. All groups conform to this basic structure. Identification is usually associated with heading lines and summarization with footing lines as suggested before. Since we are talking about levels of grouping, it is easy to understand that attributes have characteristics just as everything else. Report headings, for example, are made up of a page number, a report date, and report identification information. The heading attribute of a page group has similar characteristic information.

The Report Heading

The report heading is generally a front page that identifies the report, where it comes from, the date and time the report was printed. Most reporting in the world of microcomputers does not use a report heading. It is much more characteristic of mainframe reporting.

The Page Heading

The page heading usually contains the necessary information that identifies the report. This includes the report title, the date of the report run, the page number, and possibly an expanded description of the report scope. For example,

```
Page 1          <—— Page number
07/01/86        <—— Run date
                 PATIENT INFORMATION REPORT      <—- Report title
                 Blood Samples for Ward 26-100990    <—- Report scope
```

The page heading also contains the column headings. These are the field titles for the fields of the detail group. They are conveniently placed just below report identification section of the page heading. Within each column, the title is right justified, centered, or left justified. Usually, the title is right justified if the data type of the detail field is numeric, and left justified if the data type of the detail field is character. Centering is usually reserved for readability and is applied only to long detail fields.

The Group Headings

The group heading consists of the lines that are printed just prior to the current record or the next and lower level group heading. It is usually comprised of information relevant to the current level of grouping. You could conceivably define a grouped report with no group heading, but this conveys less visual meaning to the end user of the report.

It is best to print group headings on separate lines indenting each a number of spaces. This saves space for more report fields and also reveals the level hierarchy of the grouping you are printing. The group heading is printed prior to printing the current record, taking its information from that record.

The Group Footings

The group footing is where you print the summarization lines for the current group, and occurs after there has been a change in any of the group keys. This is where you print group totals and averages with titles.

The Page Footing

The page footing is not used often in business type reporting. In word processing or document generation applications, page footers have much wider acceptance. They are generally only used for specialized grouped reports such as invoices or purchase orders.

The Report Footing

The report footing is more important than the report heading. Here you print the summary lines for the report as a whole. This includes grand totals and statistics. You can, as well, print some kind of end-of-report message although this is not really necessary.

Example

Let's suppose, for an example, you have a sales database file that contains a record of items sold keyed on office branch and salesman. On a periodic basis, you would like a report of these transactions grouped on the key fields, branch and salesman. Naturally, you want a subtotal for each field and a total for the entire company. In turn, your detail record includes the customer number, product description, and amount for each item sold.

This definition of the report dictates that with each change in either the branch or salesman, a subtotal must be printed for that group. Additionally, you want a total of all sales for the company. The program below, Sales.PRG, prints out such a report for Sales.DBF.

Structure for Sales.DBF

Field	Name	Type	Width	Dec
1	Branch	Character	3	
2	Salesman	Character	4	
3	Customer	Character	4	
4	Product	Character	25	
5	Amount	Numeric	8	2

Sales.DBF is INDEXed ON Branch + Salesman + Customer TO Sales.NDX. It is suggested that you use this program and modify it to fit your extended reporting needs. Or, you can use it as an heuristic tool to learn some programming methods.

Sample Report Format

```
Page 1
07/01/86

                                    SALES REPORT
                              Your Company and Division

                                by Branch and Salesman

Customer    Product                          Amount
========    =======                          ======

Branch 100
   Salesman 1001

3421        Grand Piano                    4,000.00
3421        Personal Computer              3,000.00

                                           --------
   Salesman 1001  Subtotal                 7,000.00

   Salesman 1002

3215        Beatles Greatest Hits             25.00
3215        4000 Pens                        150.00

                                           --------
   Salesman 1002  Subtotal                   175.00
      Branch 100  Subtotal                 7,175.00

                                           ========
              Company Total                7,175.00
```

Sample Program

```
* Program ...: Sales.PRG
* Author ....: Christopher White
* Date ......: July 1, 1986
* Note(s) ...: Prints a two-level grouped report.
*
* ---Set up.
SET TALK OFF
SET DEVICE TO PRINT
SET MARGIN TO 10
* ---Initialize report variables.
line = 99
pageno = 1
pagelen = 55
linelen = 43
comp_tot = 0
* ---Open database files.
USE Sales INDEX Sales
* ---Print the report.
DO WHILE .NOT. EOF()
   * ---Initiliaze Branch group variables.
   branch_tot = 0
   old_branch = branch
   * ---Print Salesman heading.
   IF line > pagelen - 2
      DO Pagetop
   ENDIF
   @ line, 0 SAY "Branch " + old_branch
   line = line + 1
   * ---Print current Branch group.
   DO WHILE .NOT. EOF();
            .AND. Branch = old_branch
      * ---Initialize Salesman group variables.
      sales_tot = 0
      old_sales = salesman
      * ---Print Salesman heading.
      IF line > pagelen - 1
         DO Pagetop
      ENDIF
      @ line, 3 SAY "Salesman " + old_sales
      line = line + 2
      * ---Print current Salesman group.
      DO WHILE .NOT. EOF();
               .AND. Branch = old_branch;
               .AND. salesman = old_sales
         * ---Check for top-of-page.
         IF line > pagelen
            DO Pagetop
            * ---Print group headings.
            @ line, 0     SAY "Branch " + old_branch
            @ line + 1, 3 SAY "Salesman " + old_sales + " (Cont'd)"
            line = line + 3
         ENDIF
         * ---Print detail record.
         @ line, 0  SAY Customer
         @ line, 11 SAY Product
         @ line, 34 SAY Amount;
                    PICTURE "99,999.99"
         * ---Update relevant variables.
         line = line + 1
```

```
         sales_tot = sales_tot + Amount
         SKIP
      ENDDO
      * ---Print salesman footer.
      @ line + 1, 33 SAY REPLICATE("-",10)
      @ line + 2, 3  SAY "Salesman " + old_sales + " Subtotal"
      @ line + 2, 33 SAY sales_tot PICTURE "999,999.99"
      line = line + 4
      branch_tot = branch_tot + sales_tot
   ENDDO
   * ---Print Branch Footer.
   @ line - 1, 6  SAY "Branch " + old_branch + " Subtotal"
   @ line - 1, 33 SAY branch_tot;
                  PICTURE "999,999.99"
   line = line + 1
   comp_tot = comp_tot + branch_tot
ENDDO
* ---Print company total.
@ line, 33 SAY REPLICATE("=",10)
@ line + 1, 12 SAY "Company Total"
@ line + 1, 33 SAY comp_tot;
               PICTURE "999,999.99"
* ---Clean up.
EJECT
CLOSE DATABASES
SET DEVICE TO SCREEN
RETURN
```

```
* Program ...: Pagetop.PRG
* Date ......: July 1, 1986
* Note(s) ...: Prints the page and column headings
*              for Sales Report.
*
* ---Form feed to a new physical page.
IF pageno <> 1
   EJECT
ENDIF
* ---Print page headings.
@ 1, 0 SAY "Page " + LTRIM(STR(pageno,3))
@ 2, 0 SAY DATE()
* ---Center main page headings.
@ 4, ROUND((linelen-12)/2,0) SAY "SALES REPORT"
@ 5, ROUND((linelen-25)/2,0) SAY "Your Company and Division"
@ 7, ROUND((linelen-22)/2,0) SAY "by Branch and Salesman"
* ---Print column headings.
@ 10,0 SAY "Customer"+SPACE(3)+"Product" +SPACE(19) + "Amount"
@ 11,0 SAY "========"+SPACE(3)+"=======" +SPACE(19) + "======"
* ---Update report variables.
line = 13
pageno = pageno + 1
RETURN
```

Reference

1. *Beyond COBOL.* Gary D. Brown. John Wiley & Sons, Inc. New York. 1981

Converting a Format File to a Simple Form Report

by Mike Hedblom

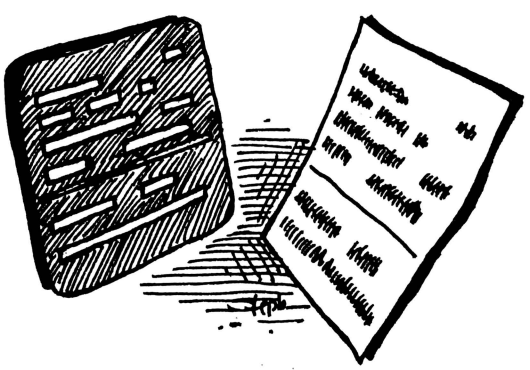
Primarily, you use format screens to make data entry and editing a little easier by displaying your fields in a "formatted" view. If you want a report based on your formatted screen definition, a problem arises in that format screens seem to be for input only. If you have programming skills, you could write a custom report from scratch; but you can modify a format file so that it will output to the printer.

So, how do you get your format file to print as a formatted report? If you have a format file created with the dBASE III PLUS command, CREATE SCREEN, you have already done the hard part of writing your custom report. Format filenames have a (.FMT) extension, and are usually initiated by issuing the command SET FORMAT TO filename. If you type this file with the dBASE or DOS "TYPE" command, you will see a listing similar to this:

```
@ 01,10 SAY "First name"
@ 01,21 GET Yourfile->First
@ 01,40 SAY "Last name"
@ 01,50 GET Yourfile->Last
@ 03,20 SAY "Social Security Number"
@ 03,42 GET Yourfile->Ssn
.
.
@ 20,10 SAY "Nick name"
@ 20,20 GET Yourfile->Nname
```

At this point you must add the control statements to direct output to the printer and move the record pointer through the database file. To modify the format file, first COPY it to a new file with a (.PRG) extension. This can be done from the dBASE III PLUS dot prompt with the following command:

```
COPY FILE <screen name>.FMT TO <screen name>.PRG
```



You have now created a file that dBASE III PLUS recognizes as a command file. Next, modify the command file by bringing up the dBASE III PLUS editor with the following command:

```
MODIFY COMMAND <screen name>
```

When the dBASE III PLUS editor comes up, the content of your format screen will display. Following the steps below, you can edit the screen definition by adding control statements and making some changes to create an operational formatted report.

1. Replace all GET verbs with SAY. dBASE III PLUS does not support printing GET statements to the printer.
2. Delete all READ statements, and re-number the row designators if you have a multiple screen format file. Format files that support more than one screen have a READ statement as the break between screen pages. If you look at the @..SAY statement below the first READ, you will see that the row number will be less than the row number of the @..SAY statement above the READ. Because dBASE III PLUS sends a form feed to the printer whenever the current row and column values are less than the last ones sent to the printer, each screen prints on a separate page. You can change this by incrementing each row number of the @...SAY statements appearing after the READ. Remember, make all row and column values greater than or equal to the previous row and column numbers.
3. Add the beginning code sequence by moving the cursor to the first row, pressing **Ins**, and inserting the following lines of code:

```
SET TALK OFF
SET DEVICE TO PRINT
USE <database file> INDEX <index file>
GO TOP
DO WHILE .NOT. EOF()
```

4. Add the ending code sequence by moving the cursor to the last line of the program, pressing **Return** to advance to the next available line, and entering the following lines of code:

```
SKIP
ENDDO
EJECT
SET DEVICE TO SCREEN
CLOSE DATABASES
SET TALK ON
RETURN
```

5. Press **Ctrl-W** to save your work and return to the dot prompt.

   To run your new report, turn your printer on and start your program with the following command:

```
DO <filename>
```

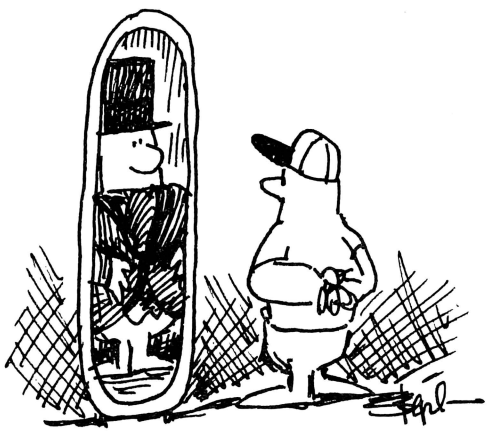
You can now print one formatted record per page. If you need a general formatted report like the standard APPEND or EDIT screen, see Stanley Ballenger's "LISTing a Database File in a Vertical Form" in the April 1986 issue of ***TechNotes*** beginning on page 22.

dBASE III PLUS Change Summary—Part One

by Joseph Perret

This begins a multi-part series listing anomalies reported in ***TechNotes*** for dBASE III version 1.1 and the Developer's Release fixed in dBASE III PLUS. These anomalies were reported in the issues from February 1985 through January 1986, the ship month of dBASE III PLUS. They are listed here so that users of dBASE III PLUS will have a clear idea of which anomalies are corrected and which are still outstanding. Each entry is followed by an explanation of the change made to the command. For instance, some anomalies have been repaired outright and now work as documented. Others, which occurred when an internal limit had been breached or incorrect syntax employed, now produce appropriate error messages.

Because of the number of anomalies originally reported, we have broken the list into several parts. We will begin by documenting all of those anomalies fixed and reported in ***TechNotes*** from July 1985 to October 1985. Next month, we will publish the list of those fixed, reported between November 1985 and January 1986.



@...GET

Formerly, any command that allowed editing of a record operated in the current work area only. However, attempting to @...SAY...GET with an ALIAS to access another work area in a format (.FMT) file would not produce an error message. Instead, the entire line was suppressed, including the @...SAY statement.

The Developer's Release returned the error message "Variable not found" if an attempt was made to @...GET a field from another work area.

dBASE III PLUS now supports editing of other work area fields from the current work area, and the use of alias names in format files to accomplish this.

Reported in the October 1985 issue of ***TechNotes***, page 27.

@...GET...PICTURE

Formerly, the A and ! functions of the @...GET...PICTURE command did not work together. If these were used together, only the first one would take effect. For example:

PICTURE "@!A" was equivalent to PICTURE "@!"
PICTURE "@A!" was equivalent to PICTURE "@A"

Although the @...SAY command reference in the Using section of the **dBASE III PLUS Reference Manual**, on page 5-25, states that these functions cannot be used together, this anomaly is corrected and you can use these functions together to form a compound function.

Reported in the August 1985 issue of ***TechNotes***, page 17.

@...SAY

Formerly, using the template symbols "$", ",", and "9" in a PICTURE clause caused comma positions to be filled with a dollar sign and all other positions to be blank if the value being displayed did not utilize all the comma positions allowed it by the PICTURE. For example:

```
mem = 123456
@ 10,0 SAY mem PICTURE "$999,999,999"
@ 11,0 SAY mem PICTURE "$999,999,999,999"
```

would output:

```
$ $123,456
$ $ $123,456
```

dBASE III PLUS now outputs a dollar sign in place of every leading space as described in the **dBASE III PLUS Reference Manual**. The previous example produces the following under dBASE III PLUS.

```
$$$$$123,456
$$$$$$$$$123,456
```

Reported in the October 1985 issue of ***TechNotes***, page 27.

CONFIG.DB

Formerly, specifying SCOREBOARD=OFF in CONFIG.DB in order to set the scoreboard off at load time had no effect.

This now has the desired effect when used with dBASE III PLUS.

Reported in the September 1985 issue of ***TechNotes***, page 34.

CTOD( )

Formerly, if you passed the CTOD( ) function a blank date with the month portion containing only one space, CTOD( ) would return the date, 11/30/99.

```
date = CTOD(" / / ")
11/30/99
```

In dBASE III PLUS, passing the CTOD() function a string not conforming to the standard date format returns a blank date. For example,

```
date = CTOD(" / / ")
  / /
```

Reported in the August 1985 issue of ***TechNotes***, page 33.

DISPLAY OFF

When a DISPLAY OFF command was used in conjunction with TO PRINT in a command file, dBASE III would output an extra linefeed between each line of display.

In dBASE III PLUS, no extra linefeeds appear as a result of using this command.

Reported in the July 1985 issue of ***TechNotes***, page 34.

EDIT

Formerly, if BROWSE was used on an indexed database file and exited with **Ctrl-Q** or **Ctrl-W**, then followed with an EDIT command, keys that move the record pointer through the database file (**PgUp**, **PgDn**, **Uparrow**, **Dnarrow**, **Ctrl-E**, **Ctrl-R**, **Ctrl-C**) did not work properly.

Sometimes pressing one of these keys would drop the user out of EDIT to the dot prompt. Other times the record pointer would move up to three records instead of one or move to the next to last record in the index file. Sometimes, the display simply locked on the current record.

Under dBASE III PLUS, exiting BROWSE with **Ctrl-W** or **Ctrl-Q** does not affect commands that reposition the record pointer.

Reported in the October 1985 issue of ***TechNotes***, page 29.

LABEL FORM

Formerly, if TRIM( ) functions were the only expressions on a line in a LABEL FORM, dBASE III would return the error message "*** Execution error on SUBSTR( ): start point out of range" when the LABEL FORM encountered a record where all trimmed fields were blank.

dBASE III PLUS now allows the TRIM( ) function to be used on blank fields in LABEL FORM line without error.

Reported in the July 1985 issue of ***TechNotes***, page 23.

LOCATE and CONTINUE

Formerly, LOCATE and CONTINUE could not be used between two or more work areas contemporaneously. If a LOCATE was issued in one work area, then issued again in another work area, a CONTINUE in the original work area moved the record pointer to the next physical record instead of moving to the next instance of the LOCATE condition.

dBASE III PLUS now supports LOCATE and CONTINUE in all ten work areas, regardless of what area LOCATE was last issued from.

Reported in the July 1985 issue of ***TechNotes***, page 23.

PARAMETERS

Formerly, a space following a memory variable in a PARAMETERS statement returned the error message, "Unrecognized phrase/keyword".

In dBASE III PLUS, a space following a PARAMETERS statement does not affect execution of the command.

Reported in the July 1985 issue of ***TechNotes***, page 34.

REPLACE ALL

Formerly, using REPLACE ALL without any additional clauses sometimes resulted in the error message "illegal opcode <no.>". The database file, however, was not affected. In addition, the opcode number and the number of messages varied from machine to machine.

In dBASE III PLUS, issuing the command REPLACE ALL by itself returns the error message "Syntax error."

Reported in the August 1985 issue of ***TechNotes***, page 34.

REPORT FORM

Formerly, CREATEing a REPORT FORM with a right margin value equal to the report width (the page width minus the left margin), would display garbage on the screen or printer. In this instance, there was no space to print the report.

dBASE III PLUS now returns the prompt "Page width too small or margins too large. Press any key to continue" when entering the right margin setting if the right margin value is equal to the report width.

Reported in the September 1985 issue of ***TechNotes***, page 35.

RETURN TO MASTER

Formerly, RETURN TO MASTER would not work properly if used in a procedure called from within a DO WHILE loop and the MASTER was the calling program. Specifically, command file execution would halt after returning to the master program file. Pressing **Esc** would then return the user to the dot prompt.

Now in dBASE III PLUS, RETURN TO MASTER works properly and the circumstances described above do not interfere with its proper execution.

Reported in the October 1985 issue of ***TechNotes***, page 30.

SET RELATION TO

Formerly, using the SET RELATION command with INTO <filename> clause preceding the TO <key> clause would not set the relation or produce an error message. DISPLAY STATUS, however, would show the relation as set.

dBASE III PLUS now properly traps this command syntax as a "Syntax error."

Reported in the September 1985 issue of ***TechNotes***, page 36.

SORT

1. Formerly, attempting to SORT a file with SET FILTER TO SUBSTR(<field name>,<begin>,<end>) = <value> would return the error message "*** STACK OVERFLOW ***" and drop the user to the operating system.

   dBASE III PLUS now allows you to SORT with a FILTER SET without error.

   Reported in the July 1985 issue of ***TechNotes***, page 35.

2. Formerly, attempting to SORT TO <filename> ON <field name> with a RELATION SET produced the error message "*** STACK OVERFLOW ***" and dropped the user to the operating system. This did not occur, however, if the RELATION was SET TO RECNO( ).

   dBASE III PLUS now performs a SORT under these conditions without error.

   Reported in the July 1985 issue of ***TechNotes***, page 35.

3. Formerly, SORT ON <field name> TO \<path>\<filename> appeared to work, but did not create the designated file in the subdirectory.

   dBASE III PLUS now fully supports SORTing to a subdirectory.

   Reported in the August 1985 issue of ***TechNotes***, page 34.

4. Formerly, SORTing a database file with more than 66 records in such a way that the target database file had exactly 64 records would produce a database file with the first record corrupted.

   dBASE III PLUS now produces a correct database file after SORTing under these conditions.

   Reported in the September 1985 issue of ***TechNotes***, page 36.

STORE

Formerly, STOREing 254 characters to a memory variable eventually gave the error message "Out of memory variable memory." With MVARSIZ set at the default, this happened after the twenty-third attempt to STORE to the memory variable. Increasing the MVARSIZ would allow more STORE commands, but eventually produced the error condition.

dBASE III PLUS now properly releases memory variables, regardless of their size.

Reported in the July 1985 issue of ***TechNotes***, page 35.

Framework II Screen Drivers

by Karen Robinson

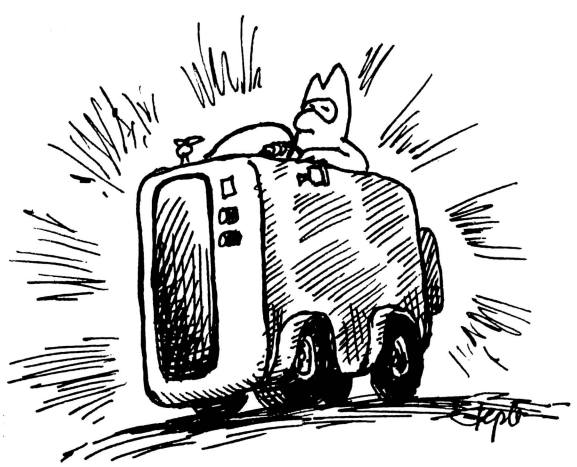
For most of the screen adapter cards supported by Framework II, there are several different drivers that will work with them. For instance, if you have a color monitor and a color graphics adapter card, you can install it as either color text or color graphics. Each choice has its benefits. This article divides the discussion of Framework II screen drivers into two parts. The first shows how the various screen driver choices affect the performance of Framework II; the second describes how color operates on the supported adapter cards.

First, the screen display on your computer is determined by the adapter card and the monitor. Together they present the screen display. As you might imagine, any one piece of equipment can have many different configurations. An example might be a monochrome monitor with an IBM monochrome screen adapter, which is text only; or the same monitor with a Hercules graphics card, which supports graphics as well as text. Or, as in the Compaq, a monochrome monitor with a color graphics card.

There are four types of screen drivers:

- Monochrome Text
- Color Text
- Monochrome Graphics
- Color Graphics

These drivers divide into two categories: text and graphics. Generally, screen displays are faster when using text drivers than when using graphics drivers. However, graphics drivers display more precise graphs than text drivers. In some configurations (such as a Compaq), a text driver may display sharper text than a graphics driver.



A further distinction between text and graphics drivers is in the way that graphs are drawn. When using text drivers, graphs on the desktop are drawn using text characters; graphs in ZOOM mode are in high-resolution graphics. The only exception to this is the IBM Monochrome driver (IBMMONO.SC), in which graphs are drawn using text characters in both modes. In contrast, all the graphics drivers display graphs in high-resolution graphics, both on the desktop and in ZOOM mode.

Within these options, text and graphics, there are some specific differences in the way bold, italics, and underline display on the screen. Table 1 below outlines these differences:

Table 1. Screen Attributes

Type of Driver	Bold	Italics	Underline
Monochrome text	Letters get brighter	Underline	Underline
Color text	Letters get brighter	A different color	A different color
Monochrome graphics	Letters get thicker	Italics	Underline
Color graphics	Letters get thicker	Italics	Underline

Color text drivers display text attributes with colors that are dependent on the colors chosen for foreground and background (more on color later). For example, bold is a brighter version of the foreground color, underline and italics appear as colors other than the foreground or background.

Using Different Screen Drivers

Now that you know the major differences between the screen drivers, we'll go back to our original topic: for any given adapter card, more than one screen driver may be used. Table 3, located at the end of this article, shows the supported adapter cards and the various drivers that can be used with these cards. This table is by no means exhaustive; it is only meant to give you an idea of what is available. We encourage you to experiment to find the combination that works best for you. For detailed information on each driver, refer to Table 4, also located at the end of this article. The first part of Table 4 shows the drivers chosen by the Setup program, and the second part lists new drivers that are available through the Ashton-Tate Software Support Center.

Installing a New Driver

To install any of the new drivers not included as part of the Setup program, follow these steps:

1. From the DOS prompt, type SETUP and then press **Return**.
2. At the first SETUP screen, select (2) ALL OTHER USES OF THE SETUP.
3. Next select the drive and directory where Framework II is installed. This is usually (2), the current default drive and directory.
4. Select (2) CONFIGURATION.
5. Select (1) PRIMARY HARDWARE.
6. Select (1) SCREEN DRIVER.
7. Select (7) I WANT TO ENTER MY OWN DRIVER FILE NAME.
8. Enter the driver file name and then press **Return**. Be sure to include the file extension.
9. Press M for MAIN MENU.
10. Select (7) SAVE ALL NEW SETTINGS.
11. When the prompt "Please insert your setup disk in drive A:" is displayed, place the disk containing the new driver file into drive A:. Then follow the prompts on the screen to finish saving the changes.

Colors on the Desktop

With all the color graphics drivers you can assign a foreground color for the desktop by using the Framework II Setup program. Because of limitations in the cards themselves, this is not always true for background colors. For instance, the IBM Color Graphics driver (IBMCOLOR.SC) allows you to set a foreground color, but background must be black.

In the Setup program, the default settings for foreground and background are both 0. Some monitors display amber on black, others white on black, despite the default settings. This is because Setup prevents you from setting foreground and background to the same color, which otherwise would give you a blank screen.

The color choices made in Setup dictate the colors of the desktop. They do not necessarily affect the colors used in graphs, either on the desktop or in ZOOM mode.

Colors in Graphs

Some of the color drivers draw multicolored graphs on the desktop and in ZOOM mode. The number of colors used to draw graphs on the desktop may differ from the number used in ZOOM mode. To determine the number of colors in which graphs will be drawn, for both the desktop and Zoom mode, refer to Table 4 under the column heading "Colors in Graphs."

Let's talk about graph frames on the desktop first. If the number of colors used in desktop graphs is 1, then the foreground and background colors of a graph are drawn using the foreground and background colors of the screen. However, if the number of colors used in desktop graphs is more than 1, then the foreground of a graph is multicolored and the background is the same color as the background color of the screen.

Graphs displayed in ZOOM mode are another story. There is no way to determine what colors a graph will be in ZOOM mode. The background colors are static (see Table 4) and the foreground colors vary depending on the driver and card used.

Color Charts

Among the color cards supported by Framework II, there are basically three different color charts: one for the adapter cards that use the IBM BASICA colors, one for the STB adapter cards, and one for the EGA adapter cards.

Looking at the color chart below (IBM BASICA Colors), notice that the colors 0 - 7 are the primary colors, and 8 - 15 are brighter versions of those same colors. The choice is yours. Keep in mind that the contrast and brightness adjustments on your monitor will affect the appearance of these colors. The drivers that use the IBM BASICA colors are:

BOB16CLR.SC	EGACTXT.SC	M24_33.SC
BOB16CTX.SC	FASTCTXT.SC	SIGCOLOR.SC
BOB_EXT.SC	IBM3270.SC	SIGDCLR.SC
COMPAQ.SC	IBMCOLOR.SC	SIGTEXT.SC
COMPAQC.SC	IBMTXT.SC	STB400C.SC

IBM BASICA Colors

Color Number	Color Name
0	Black
1	Blue
2	Green
3	Cyan
4	Red
5	Magenta
6	Brown
7	White
8	Gray
9	Bright Blue
10	Bright Green
11	Bright Cyan
12	Bright Red
13	Bright Magenta
14	Yellow
15	Bright White

STB Colors

Getting colors on the multicolored STB drivers is a bit more involved than on the other cards. The drivers affected are STBCOLOR.SC and STB400DC.SC. Two color palettes are available:

Color Number	Palette #0	Palette #1
0	Black	Black
1	Green	Light Blue
2	Red	Magenta
3	Brown	White
6	—	Red

You can choose colors from palette #0 or palette #1, but not from both. If you want the colors in palette #0, simply enter the appropriate numbers for foreground and background. If you want colors from palette #1, add 32 to the foreground color.

To get brighter colors for foreground and background of either palette, add 16 to the foreground color number.

For example, if you want a red foreground and a blue background (palette #1 colors), select a foreground color of 38 (6 for red, plus 32 for palette #1) and a background color of 1. If you want the foreground and background colors to be bright, then change the foreground color to 54 (38 + 16).

EGA Colors

When using the EGA color graphics drivers (EGACOLOR.SC and EGADCLR.SC), there are 64 (0 - 63) different colors to choose from. An official color chart is not available, so we made up our own (see Table 2). This was done by sitting down and trying out the different color choices. Use this chart as a guide, and not as the definitive reference on colors. As you will see, some of the color names are amusing!

Table 2 EGA Color Chart

Number	Color	Number	Color
0	Black	32	Black
1	Blue	33	Dark Blue
2	Green	34	Pale Green
3	Cyan	35	Dark Cyan
4	Red	36	Deep Orange
5	Magenta	37	Deep Pink
6	Pale Yellow-Green	38	Light Orange
7	Gray	39	Pale Salmon
8	Gray	40	Dark Dark Blue
9	Deep Blue	41	Bright Blue
10	Pale Green	42	Pale Green
11	Light Bright Blue	43	Light Bright Blue
12	Dark Deep Pink	44	Deep Orange
13	Deep Violet	45	Pale Bright Violet
14	Dark Brown	46	Pumpkin
15	Dark Yellow-Green	47	Pale Bright Violet
16	Dark Pale-Green	48	Dark Yellow-Green
17	Black	49	Dark Deep Blue
18	Bright Green	50	Dark Purple
19	Bright Pale-Aqua	51	Deep Green
20	Dark Brown	52	Deep Orange
21	Dark Purple	53	Light Orange
22	Bright Green	54	Deep Yellow
23	Bright Pale-Aqua	55	Light Yellow-Green
24	Dark Gray	56	Gray
25	Deep Violet	57	Bright Blue
26	Deep Lime	58	Bright Green
27	Bright Cyan	59	Bright Cyan
28	Dark Magenta	60	Bright Red
29	Deep Violet	61	Bright Magenta
30	Deep Lime	62	Yellow
31	Bright Cyan	63	Bright White

Well, that's it for Framework II screen drivers. By now you should know the basics and can use the charts provided to set up your system to best fit your needs. Tables 3 and 4 follow.

Table 3. Display Adapters and Drivers

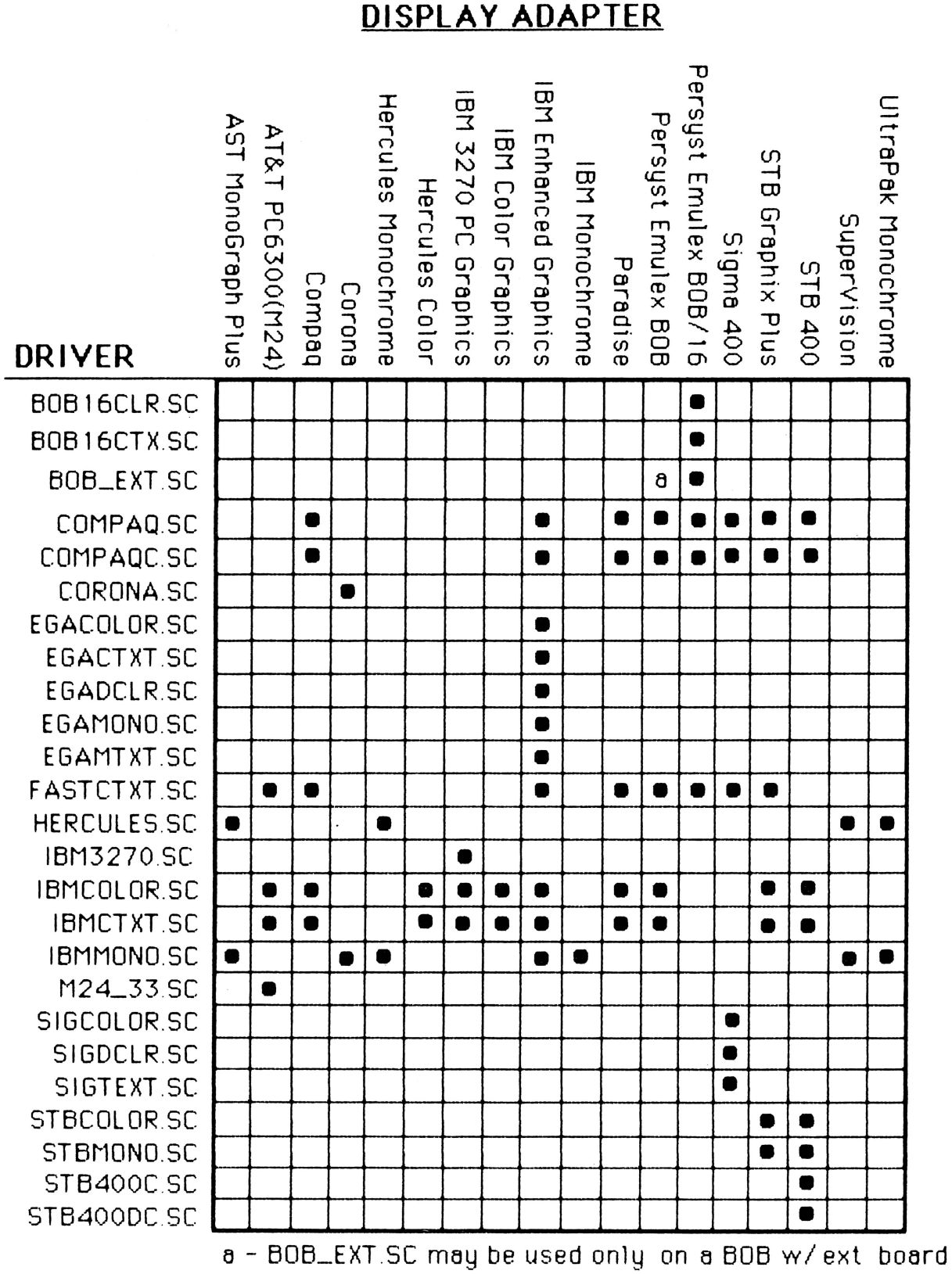


Table 4. Framework II Screen Driver Attributes

Adapter Cards	Filename	Driver Type	Screen Size	Desktop				ZOOM Graphs	
				Foreground colors	Background colors	Mode for Graphs	Colors in Graph	Colors in Graphs	Background Color
SETUP Choices									
AST MonoGraph Plus	HERCULES.SC	Mono	90 x 29	—	—	Graphics	—	—	—
AT&T PC6300 (Olivetti M24) [a]	M24_33.SC	Color	80 x 33	1 - 15	Black	Graphics	1	3	Black
Compaq Hi-Res Graphics [a]	COMPAQ.SC	Color	80 X 25	1 - 15	Black	Graphics	1	3	Black
Compaq Monochrome Text [a]	COMPAQC.SC	Color	80 x 25	0 - 15	0 - 15	Text	1	3	Black
Corona Hi-Res Graphics	CORONA.SC	Mono	80 x 25	—	—	Graphics	—	—	—
Hercules Monochrome Graphics	HERCULES.SC	Mono	90 x 29	—	—	Graphics	—	—	—
EGA Color Graphics	EGACOLOR.SC	Color	80 x 29	0 - 63	0 - 63	Graphics	1	3 or 15[b]	Black
EGA Color Text	EGACTXT.SC	Color	80 x 25	0 - 15	0 - 15	Text	1	3 or 15[b]	Black
EGA Monochrome Graphics	EGAMONO.SC	Mono	80 x 29	—	—	Graphics	—	—	—
EGA Monochrome Text	EGAMTXT.SC	Mono	80 x 25	—	—	Text	—	—	—
IBM Monochrome or Color Graphics[c]	IBMMONO.SC	Mono	80 x 25	—	—	Text	—	—	—
	IBMCOLOR.SC	Color	80 x 25	1 - 15	Black	Graphics	1	3	Blue
IBM Monochrome	IBMMONO.SC	Mono	80 x 25	—	—	Text	—	—	—
IBM Color Graphics	IBMCOLOR.SC	Color	80 x 25	1 - 15	Black	Graphics	1	3	Blue
IBM Color Graphics (Text Mode)	IBMCTXT.SC	Color	80 x 25	0 - 15	0 - 15	Text	1	3	Blue
IBM 3270 PC Graphics	IBM3270.SC	Color	90 x 29	1 - 15	Black	Graphics	1	3	Black
Persyst Emulex BOB	COMPAQ.SC	Color	80 X 25	1 - 15	Black	Graphics	1	3	Black
STB Graphix Plus II 4 Color	STBCOLOR.SC	Color	80 X 25	0 - 3	0 - 3	Graphics	3	15	Black
STB Graphix Plus Monochrome	STBMONO.SC	Mono	80 x 29	—	—	Graphics	—	—	—
UltraPak (Monochrome graphics)	HERCULES.SC	Mono	90 x 29	—	—	Graphics	—	—	—
New Drivers [d]									
Persyst Emulex BOB/16	BOB16CLR.SC	Color	80 x 33	1 - 15	Black	Graphics	1	15	Black
	BOB16CTX.SC	Color	80 X 25	0 - 15	0 - 15	Text	1	15	Black
Persyst Emulex BOB w/Extended Board	BOB_EXT.SC	Color	80 x 33	1 - 15	Black	Graphics	1	3	Black
EGA (desktop graphics)	EGADCLR.SC[f]	Color	80 x 29	0 - 63	0 - 63	Graphics	3 or 15[b]	3 or 15[b]	Black
Any Color "Compatible" [e]	FASTCTXT.SC	Color	80 X 25	0 - 15	0 - 15	Text	1	3	Blue
Sigma Display Adapter	SIGCOLOR.SC	Color	80 x 33	1 - 15	Black	Graphics	1	15	Black
	SIGDCLR.SC[f]	Color	80 x 33	1 - 15	Black	Graphics	15	15	Black
	SIGTEXT.SC	Color	80 x 30	0 - 15	0 - 15	Text	1	15	Black
STB Super Res 400	STB400C.SC	Color	80 x 33	1 - 15	Black	Graphics	1	15	Black
	STB400DC.SC[f]	Color	80 x 49	0 - 3	0 - 3	Graphics	3	15	Black

[a] On a monochrome monitor, colors are shown in shades of green.
[b] Dependent on amount of memory on the board.
[c] Framework II checks the hardware to determine which driver to install.
[d] These new drivers are available from Software Support.
[e] This driver can be used with several different adapter cards, see Table 2.
[f] These drivers display multi-colored graphs on the desktop and may be slower than the drivers that don't display multi-colored graphs.

Symphony to Framework II Translation

by Lisa Wanek

Many users are interested in translating data from Lotus' Symphony program into Framework II. There are several different types of data in both Framework II and Symphony, and each type requires a somewhat different procedure. For instance, translation of text information from Symphony into Framework II is fairly straightforward. Spreadsheet-to-spreadsheet translation, on the other hand, is more involved. The program presented here translates Symphony spreadsheet information, including most formulas, to a Framework II spreadsheet. Database-to-database translation is also possible. All three methods are discussed below.

Text-to-Text Data Translation

Any kind of Symphony data may be translated into Framework II as text. The following is a step-by-step method for doing just that. First, create a print file (.PRN) in Symphony, and then load this file directly into Framework II. Please note that if your Symphony file has a width greater than 240 characters, you will have to break it into smaller sections to fit into Framework II.

The following Symphony keystrokes create a text file for translation. In this example the range name to be translated is Translate and the .PRN file is called Tempfile. You type the **highlighted** keys.

F10 Range Name Create **TRANSLATE** <**Return**>
(highlight range to be transferred) <**Return**>
F9 Print Settings
Source Range **TRANSLATE** <**Return**>
Destination File **Tempfile** <**Return**>
Other Attributes No
Page Breaks No
Margins No-margins
Quit
Align
Go

Do not Go more than once, otherwise Symphony will continue to add to the file instead of writing over the old one, and the file will contain duplicate information. Also, erase Tempfile.PRN if it already exists, otherwise Symphony will add your data to the end of it.

You may bring the file you created in Symphony directly into Framework II as you would any other Framework II file. It will be read into a word frame.

Database-to-Database Translation

To create a Framework II database from a Symphony database, use the translate utility provided by Symphony to create a dBASE II .DBF file. Framework II easily reads dBASE II files directly into a database frame.

Let's assume that you already have a database defined in Symphony. When you view the settings sheet for the database, you will see the range names attached to the FORM window. In the key sequence below, a range name refers to the *Main* range in the settings sheet. For example, if you use the Generate command to create a database called George, the range you will use is named George_DB by the Symphony Generate command. (See the FORM window settings sheet.) I will use George_DB as a sample range name below, and Tempfile as a sample filename.

F9 File Xtract Formulas
Tempfile (filename) <**Return**>
George_DB (range name) <**Return**>
F9 Exit Yes
Translate
choose **.WRK TO .DBF**
B: (enter path where Tempfile resides)
choose **Tempfile** <**Return**>
B: (enter destination path)
.DBF file will be created on destination drive

You may bring the Tempfile you created in Symphony directly into Framework II as you would any other Framework II file. It will be read automatically into a database frame. Press **RECALC (F5)** to read records into the frame, then change the frame label and save it to disk.

Spreadsheet-to-Spreadsheet Translation

Translating spreadsheets, including their formulas, is more involved. It is a good idea to be familiar with the differences between FRED and Symphony formulas. For the most part, numeric or statistical functions are the same. However, even when things appear to be the same, they may not work in exactly the same way. You may need to edit some of the formulas after the file has been translated into Framework II to be sure that everything is correct. The following steps in Symphony will prepare your file for translation. Be aware that all formatting, column widths, and label alignment will be lost in the translation and will have to be set up again in Framework II. Also note that any repeat key cells (\) in Symphony will not translate as repeating. Again, this will have to be corrected in Framework II by using the **@rept** function or by typing in each character.

Again, I will use Tempfile as my temporary sample filename and Translate as the range name for the information I am translating.

F10 Range Name Reset Yes
F10 Range Name Create **Translate** <**Return**>
(highlight range to be transferred) <**Return**>
F10 Range Label-Alignment Left **Translate** <**Return**>
F10 Format Reset **Translate** <**Return**>
F9 Print Settings
Source Range **Translate** <**Return**>
Destination File **Tempfile** <**Return**>
Other Attributes No
Page Breaks No
Margins No-margins
Other Format Cell-formulas
Quit
Align
Go

As with the text-to-text translation, do not Go more than once, and erase Tempfile.PRN if it already exists.

The following FRED program converts the Symphony .PRN file produced above into a Framework II spreadsheet.

```
; Symphony to Framework II translation program
; by Lisa Wanek.
;
@setselection("symphony"),
;insert end-of-data mark (99) at end of data and return to top.
@performkeys("{Dnlevel}{Ctrl-End}99{Return}{Ctrl-Home}"),
@local(textwhat,storetext,what,wholewhere,storeform,where,do),
@performkeys("{F6}{Ctrl-Rightarrow}{Return}"),
where := @textselection,
@while(@mid(where,1,2)<>"99",
    @performkeys("{Rightarrow}{Rightarrow}{Rightarrow}" &
                 "{F6}{End}{Leftarrow}{Return}"),
    what := @textselection,
    wholewhere := "frame."&where,
    @if(@mid(what,1,1)="'",
        @list(
            textwhat := @mid(what,2,@len(what)-1),
            storetext := wholewhere&" := "&""""&textwhat&"""",
            @storetext
        ),
```

```
        @list(
        storeform := "@setformula(" & wholewhere & "," &
             what & ")",
        @storeform
      )
   ),
   @performkeys("{Dnarrow}{Home}"),
   @performkeys("{F6}{Ctrl-Rightarrow}{Return}"),
   where := @textselection,
),
;delete the end-of-data indicator.
@performkeys("{Del}{Del}"),
@setselection("frame"),
@performkeys("{F5}")
```

In order to run the program, you will need two other frames, one frame containing the information brought over from Symphony, and the other, the spreadsheet frame to create. Carefully follow the steps below.

1. Load program Sym_to_fw onto the desktop.
2. Load the file you created in Symphony (Tempfile) onto the desktop and rename it to Symphony.
3. Create a spreadsheet frame with as many rows and columns as your Symphony file, and name it Frame.
4. **SIZE (F4)** and **DRAG (F3)** your Symphony and Framework II frames so that both are visible to you on the desktop.
5. Highlight Sym_to_fw and press **RECALC (F5)**.
6. Press **Alt-G**.

That's all there is to it. If you have a large file, be prepared to wait a while. When you are finished, you will need to look at the data to be sure everything translated correctly.

SUPERLoK Notes

by Olivier Biggerstaff

The purpose of these notes is to provide you with technical information about the SUPERLoK copy-protection system and how it affects installing and uninstalling Ashton-Tate products. After you have read "SUPERLoK Notes", you will have a clear understanding of (1) the error messages generated by SUPERLoK and what they imply, and (2) how SUPERLoK performs in various configurations.

This is the second set of SUPERLoK Notes published in ***TechNotes***. The first set was orginally published in the December 1985 issue. This month we update those notes by focusing on resolving installation problems. Most useful is the section entitled "Questions To Ask Yourself If You Get an Error." Also presented is a series of problem-specific notes and an exhaustive list of error messages that includes work-arounds for the error in question.

The supported hardware and compatibility list is not included this time since most PC/MS-DOS compatible computers and hard disk formats are supported by the latest version of SUPERLoK, version 2.0.3.

If you want to gain a broad understanding of SUPERLoK and its effect on installation of Ashton-Tate products, read the "SUPERLoK Notes" both in this issue and in the December 1985 issue of ***TechNotes***.

Supported Hardware Environment

SUPERLoK version 2.0.3 was designed to install and execute on a variety of computers, plug-in boards, motherboard replacements, and hard disk formats.

SUPERLoK supports most plug-in turbo boards designed to speed up the operation of the computer. Only boards that meet IBM specifications, and run at clock speeds of up to 8MHz, inclusive, are supported for installs and uninstalls. Some motherboards have a hardware switch that can be set to select one of several clock speeds.

The PC/MS-DOS version 2.x and 3.x hard disk format is fully supported. Various other formatting utilities are supported as long as their formats are compatible with PC/MS-DOS. An example of an unsupported hard disk format is Novell's proprietary Local Area Network (LAN) operating system.

Questions To Ask Yourself If You Get an Error

There are a number of reasons why an installation may fail on a particular machine. The computer or its hard disk may not be supported for installation. Usually, a failed install is due to some kind of hardware problem or incompatibility. If you have encountered any SUPERLoK error message, refer to the following list of diagnostic questions and steps before calling Ashton-Tate Software Support.

1. Do you have a memory-resident utility loaded?

   The presence of any programs in memory foreign to the default system, such as memory-resident utilities, can produce DOS errors during an install. Specifically, programs that alter the operating system by redirecting BIOS-level interrupts, or that cause the operating system to execute routines in response to a hardware interrupt, may cause SUPERLoK errors.

2. Is your hardware performing properly?

   If your hardware is performing at a substandard level, intermittent hardware errors are likely to occur during installation or uninstallation. Various problems, including misaligned floppy disk drives or a failing hard disk controller card, will cause an installation to fail.

3. Have you run CHKDSK?

   Use the DOS CHKDSK/F command to determine whether the hard disk has any lost clusters. Lost clusters are best described as sections of files on the disk not accessible by the operating system as a file. SUPERLoK may not install correctly if lost clusters are present. If your hard disk system uses the second File Allocation Table (FAT), load your Ashton-Tate software using the key disk approach, as discussed in the section "Using the Key Disk Approach." You may want to reformat your hard disk using a different cylinder for the system tracks.

4. Is the format of your hard disk compatible with SUPERLoK?

   The format of the hard disk can cause problems. SUPERLoK installs only on PC/MS-DOS compatible hard disk formats. Many external hard disk manufacturers provide a format utility that produces a compatible format. Some, however, may not, such as Novell's LAN format. If the hard disk format is not supported, SUPERLoK will return an error number, such as 0104 or 0107.

5. How large is your hard disk partition?

   Make sure you are installing to a hard disk partition large enough to hold the two hidden support files and a hidden protected product file in the root directory. A hard disk partition must not be less than 2.5 mb. The cluster size must be 64K or less. Cluster size refers to the amount of disk space DOS allocates per sector when your hard disk is formatted. The size is 4 or 8K. You will get the error number 0370 if you try to install to a hard disk with a cluster size greater than 64K.

6. Are you uninstalling using the same disk you installed from?

   At the time you uninstall, make sure that you are using the same System Disk #1 that you used to install. If the error messages 9062 or 9070 are displayed, the uninstallation process never completes. This error is usually caused by an incompatibility in the floppy disk drive used to install. Though the installation was successful, the information written back to the floppy disk was not written correctly. Request a replacement disk. You are not using the correct disk if the error message 0850 is displayed.

7. What's your clock speed?

   Look for the type of microprocessor chip (CPU) in the computer. If it is a 80186 or 80286 CPU chip, check the clock speed. Version 2.0.3 was designed to install at a maximum of 8MHz. A SUPERLoK timeout error number 8128 or 8728 can be caused by a high clock speed or by the presence of memory-resident programs.

8. What are the capabilities of your floppy disk drives?

   Ashton-Tate products are supplied on 360K density floppy disks only. The 1.2 mb floppy disk drive is supported only in the 360K mode.

9. Who is the manufacturer of your turbo or acceleration boards, if any?

   Some turbo boards and hard disk controller cards use disk-cacheing software. Disk cacheing is the process by which disk input/output is handled at speeds faster than that of the operating system. Its presence during installation causes problems.

10. Is your computer connected to a network or any external devices?

    Be sure that you are installing on a supported network only. A network is *not* supported if it has *not* been tested and approved by Ashton-Tate. External devices, such as modems, and bar code readers, may cause problems.

11. Have you tried installing or executing on a different computer?

    Make certain that both System Disks #1 are installable and executable on a different computer before requesting a replacement of any System Disk #1.

12. Have you recently updated the operating system on your hard disk from PC/MS-DOS 2.x with PC/MS-DOS 3.x?

    The following scenario demonstrates a common error made by hard disk users. Assume you own an IBM PC with 256K of RAM and no hard disk. To expand your computer, you install a memory board and a hard disk. You are presently using PC-DOS 2.1, and you format the hard disk with that version of DOS. You then install dBASE III PLUS. A few days later you acquire a version of PC-DOS 3.1 and install it on the hard disk with the SYS command. You boot your computer from the hard disk and try to execute dBASE III PLUS, but it won't run anymore. What has occurred?

The problem is quite simple to understand. A hard disk formatted with PC/MS-DOS version 2.x must be reformatted if version 3.x is used. It is not sufficient to use the SYS command to transfer the operating system files to the hard disk. The FAT is larger in version 3.x than in 2.x. SUPERLoK relies on the FAT for certain aspects of its hidden support files to properly execute the product it is protecting. However, a SUPERLoK installation and uninstallation is possible if version 3.x is SYSed to the hard disk. If you SYS version 3.x on a hard disk containing a SUPERLoK-installed protected product, uninstall all protected products. Then BACKUP the hard disk and reformat with DOS version 3.x.

SUPERLoK Files and Their Locations

After installing your SUPERLoK protected product, the root directory of the hard disk contains two hidden SUPERLoK support files, CML0203.HCL and VDF0203.VDW, and a third hidden file, the protected product. The dBASE and Framework hidden filenames are DBASE.XXX or FW.XXX, where .XXX is any of several extensions, such as .LOD or .277. These three files are read-only and cannot be deleted from DOS without changing the read-write status.

Using BACKUP and RESTORE

The Framework II and dBASE III PLUS *Getting Started* booklets include information about the DOS BACKUP and RESTORE commands. This has generated many calls about the proper usage of these commands. The following discussion explains some ways to safeguard your installed copy when using DOS BACKUP and RESTORE.

With all versions of SUPERLoK, you can backup your entire hard disk without damaging the copy protection. You do need to be careful, however, when you do a full-system or root directory RESTORE. In version 2.0.3, the copy protection files that can be damaged by the restoring process are read-only. To RESTORE the full system, use the /P option to prompt you when a read-only file is to be restored. So that these files are not restored, answer "N" to all the prompts to restore read-only files.

Another strategy to avoid restoring the root directory is to selectively BACKUP subdirectories only. For example,

```
CD \DBASE
BACKUP C: A: /S
```

See your DOS manual for further explanation of the parameters. On the other hand, if a full-system BACKUP has been done, you can selectively restore all directories except the root. This will assure that all hidden files in the root directory are not restored. For example,

```
RESTORE A: C:\DBASE /S
```

Again, refer to your DOS manual for further explanation and more examples of the RESTORE command syntax.

Using the Key Disk Approach

If you cannot install Framework II or dBASE III PLUS to the hard disk, you can use the key disk approach instead. This is the method of loading a SUPERLoK copy-protected product directly from System Disk #1. On a dual-floppy disk drive, it is the only way to load the product. On a hard disk system, however, this provides an alternate means of running from the hard disk.

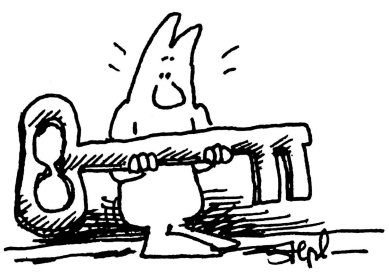
To use the key disk approach with a hard disk system:

1. Set up by COPYing all files from System Disk #1 and #2 to your product subdirectory on the hard disk. For example, assuming files are copied from the A: drive to an existing subdirectory on the hard disk called DBASE:

   A>COPY *.* C:\DBASE

2. To run, get into the appropriate hard disk directory, i.e., \DBASE in the above example, place the System Disk #1 in the A: drive, and type "DBASE" or "FW," depending on the product you are running.

As the product starts up from the hard disk, it looks for the hidden copy protection files in the root directory. If they are not present, it will look to the A: drive to load those files. Once you are in the program, you can remove System Disk #1 from the floppy drive and put it away.



Using INSTALLH.COM to Install dBASE III PLUS

Normally, a SUPERLoK-protected product is installed and uninstalled by batch or setup files. dBASE III PLUS is installed by a batch file and Framework II by a setup program called SETUP.COM. Both use the only file that can actually install the product to the hard disk, INSTALLH.COM.

INSTALLH.COM may be used directly from the DOS prompt to install and uninstall your product in place of the provided batch or setup files. To install, first put the System Disk #1 into your floppy drive and then type:

INSTALLH P=<floppy drive> T=<hard drive>

In this command, the argument of the "P" parameter is the designator of the floppy drive containing System Disk #1, and the argument of the "T" parameter is the designator of the hard drive where you want to install the product.

To uninstall the product, type:

INSTALLH P=<floppy drive> T=<hard drive> /U

with System Disk #1 in a floppy disk drive. /U is the uninstall option.

For more details on INSTALLH.COM, refer back to the "SUPERLoK Notes" in the December 1985 issue of ***TechNotes***.

Specific Installation Problems

VFeature Format Utility

A popular hard disk format utility is Golden Bow's VFeature. This utility formats a hard disk with one of five different sector sizes, 512 bytes, 1K, 2K, 4K, or 8K. SUPERLoK will install on hard disks formatted with this utility only if 512 byte sectors are specified during format.

Erasing the Product's Read-only (.COM) File

An installed product is executed by a mini-loader file with a (.COM) extension, such as DBASE.COM and FW.COM. These files are read-only and created from System Disk #1 into your hard disk subdirectory during installation. They can be copied to other subdirectories, but cannot be deleted with the DOS ERASE command since DOS cannot delete a read-only file until its attribute is changed to read-write. To change the attributes of a read-only file to read-write, use the ATTRIB command in DOS 3.0 or 3.1, or any other utility that changes file attributes. You may then ERASE the file from the hard disk.

Uninstalling from the subdirectory containing the (.COM) file will remove the mini-loader. If, however, you uninstall from another subdirectory, the copy in your original subdirectory will not be removed. So, be sure to get into the product directory on the hard disk before uninstalling. If you do uninstall and the mini-loader is not removed, change the file attribute to read-write and delete it. If you do not have a utility to change file attributes, re-install the product (using INSTALLH.COM) in the directory containing the mini-loader, and then uninstall it. Either of these steps will remove the mini-loader from the current directory of the hard disk. Note that the presence of the mini-loader in the current directory does not affect the install.

Installing Two Copies on the Same Disk

The following special installation case applies to any product protected by SUPERLoK, but especially to dBASE III PLUS since it is actually two software products in one package: single-user and the Administrator. It is treated as one product for installation purposes.

If you install two copies of the same software protected with the same version of SUPERLoK onto the same hard disk, both copies will execute only if they are installed in different subdirectories. If they are both installed in the same subdirectory, only the most recent installation will execute. If one of the two copies is uninstalled from any subdirectory, the other will not execute and the error number 13, 0116, or 0162 will be returned. To recover the count on the second install disk, uninstall it. You may uninstall either of the two copies back to their respective System Disk #1. The order in which they were installed has no bearing. You will, however, get an 0850 error message if you try to uninstall to a System Disk #1 installed onto a different hard disk.

DBASE CANNOT BE FOUND (30) - Missing .LD1 File

An error message frequently encountered is "DBASE CANNOT BE FOUND (30)." This runtime error message is not a serious one, and is caused only if one of the two following files are not accessible: DBASE.LD1 for the single-user dBASE III PLUS, or DBA.LD1 for the Administrator.

When this error message occurs, make sure that the installation was completed correctly. Do not uninstall dBASE III PLUS. Simply copy the appropriate .LD1 file from the floppy disk to your product subdirectory on the hard disk. On a network, make sure that the DOS or Novell SEARCH paths are correctly defined. Check the read-write status of the Administrator files. Make sure that they are read-only.

Framework II Setup Program

The SETUP program for Framework II returns the following error message if a hard disk installation or uninstallation fails:

> INSTALL.COM failed, its error code was 1
> Copy this error number down and call technical support
> Press any key to proceed

This error message is generated if SUPERLoK returns an error to the Setup program. The SUPERLoK installation program (INSTALLH.COM) returns the correct error message on the screen, a few lines above this one. If you don't remember the SUPERLoK error message, execute INSTALLH.COM to reproduce the error message by using it to directly install or uninstall from the A prompt, with the Setup Disk in the A drive.

The latest version OF SETUP.COM returns the following message:

> The ERROR CODE on the line above this one may turn
> out to be important. Please write it down NOW, before
> proceeding.

Use this error code to refer to your problem using the list of error messages below.

DBASE.COM

The install and uninstall batch files provided with dBASE III PLUS were designed with the assumption that the status of an installation can be correctly identified by the presence of the file DBASE.COM. This is not always the case. DBASE.COM does not have to be present in the subdirectory to uninstall dBASE III PLUS. A subdirectory containing a copy of DBASE.COM does not mean that the product has been installed. This file can be copied to any subdirectory, if desired.

SUPERLoK Error Messages

Error messages may be generated by the SUPERLoK protection software while installing the product or loading the protected software into memory. If an error occurs during installation to a hard disk, SUPERLoK will issue an error message in the following form:

> Install Terminated Error Code = xxxx

The notation xxxx refers to a one-to-four digit error code. If an error occurs while the protected program is being loaded into memory, SUPERLoK will issue an error message in one of the following forms:

> Load Failed xx
> Load Failed Error Code xxxx
> Unauthorized Duplicate (Code xxxx)

where xx and xxxx are the error code numbers.

The following is a list of error messages that SUPERLoK can return during hard disk installation or uninstallation. To lookup the message you have received:

1. First look up the text of the error message in the error message list.
2. If the message includes an error code number, look it up in the error number list.

Error Messages

Cannot run with drives as specified, OR drive was not ready

> Make sure the drive letters are correct. Make sure the floppy disk drive door is closed.

Diskette I/O error = XXXX

> Can be caused by damaged media, malfunctioning disk drives, or an incompatible computer. Try installing on a different drive and/or computer. Request a replacement disk if the same error message is displayed.

Hard Disk incompatible, Cannot proceed = XXXX

> Make sure that the hard disk format is compatible with the PC/MS-DOS format. A hard disk partition must be at least 2.5 mb in size.

Install terminated Error Code = XXXX

> See the error numbers list below.

Installation count has been exhausted

> All allowable copies have been installed. Uninstall from the original disk.

Insufficient Memory Available = XXXX

> Try installing without memory-resident programs in memory.

Invalid drive specification

> Make sure the drive letters specified on the INSTALLH command line point to drives that exist on the equipment being used for installation.

Invalid option in command tail

> See the section "Using INSTALLH.COM to install dBASE III PLUS" for the correct syntax for INSTALLH.COM.

Load Failed = XXXX

May occur for any one of four reasons: a PC/MS-DOS RESTORE , not enough memory available to load the protected program, you try to run the product from a subdirectory after it has been uninstalled, or if you receive an I/O error from DOS .

Maximum install count already available. UNinstall ended.

The System Disk #1 being used for uninstall was not used to install, or is not the same one used for initial the install.

Not enough space on Hard disk

Remove a few files from the hard disk and try to install again.

Not enough storage to run install program

This message refers to the availability of memory. Remove memory-resident programs. It may be necessary to reduce the BUFFERS and FILES settings in the CONFIG.SYS file.

Product is already installed. Install ended

The maximum installation count on Ashton-Tate System Disks #1 is one. You must uninstall the product before reinstalling it on a different hard disk.

Product never installed. UNinstall ended XXXX

A root directory restore may have been performed. Make sure that you uninstall to the disk from which you originally installed.

Product protection system damaged
Possibly caused by Root Directory Restore
Previously installed Products will have to be installed again.
Enter Y to continue or N to quit, then hit RETURN

This can occur while installing or uninstalling. The current installation has been damaged. Answer "Y" to this question to remove the damaged copy and to complete the procedure.

Program too big to fit in memory

Check the memory requirements for the program being installed. Remove any memory resident utilities to free memory.

Remove WRITE PROTECT Tab from diskette

System Disk #1 cannot be write protected during installation and uninstallation because the install count meter on the floppy disk must be updated.

Root Directory full, cannot proceed XXXX

A minimum of three files must be removed from the root directory to free space necessary for the SUPERLoK files.

Target media type incorrect XXXX

Make sure the drive letters specified for the floppy disk and hard disk are correct. Use only a supported hard disk format.

Unable to run on this machine XXXX

There are certain compatibles that will execute a protected product, but the install process will not function properly. If you are installing to a hard disk and get this error message, the alternative is to use the key disk approach.

Unauthorized Duplicate (Code XXXX)

Normally this message is issued when a truly unauthorized copy of the protected software has been made. This error message may occasionally be issued for a good copy. The problem may stem from the floppy disk not being correctly read by the disk drive due to dirty heads, improper drive speed, or an improperly aligned head. Sometimes a working copy installed from a floppy in drive A: may appear to be an "Unauthorized Duplicate" when the program is run from drive B:. Some remedies are as follows:

1. Uninstall and re-install the product.
2. Try running the program from a different disk drive.
3. Clean the heads on the drive from which you are attempting to run the protected program. It is safest to execute the program from the same disk drive or computer where it was first installed.

UNinstall terminated Error Code = XXXX

See the error numbers list below.

Wrong Diskette Inserted

Make sure the product and target disks are inserted in the drives as specified.

Error Numbers

10 Load Failed

The product and SUPERLoK files will not fit into memory. There is insufficient main memory to execute SUPERLoK and the protected program. If you are sure your computer has enough memory to run the program, check to see if memory resident programs such as PROKEY, SIDEKICK, a RAM disk, or a SPOOLER are present. If so, reboot your system without these programs. This will free additional memory. These programs are often started with an AUTOEXEC.BAT file. Run CHKDSK/F to remove lost clusters from the hard disk.

10 Disk I/O

An I/O error on an unprotected track of System Disk #1 was received from DOS. Try to install again with the same disk. Try to install with the backup copy of System Disk #1 provided. Try this on a different drive and/or computer.

12,13

The protection system cannot find a file or part of the protection system has been damaged. It may be the result of a RESTORE on the root directory. It may also occur after the product was uninstalled from a subdirectory other than the one into which the program was installed. The error is displayed if the .COM file left in the subdirectory is executed. If this message is displayed after uninstalling or while executing a protected file from the hard disk, attempt to uninstall it.

0104, 0107

The hard disk installation error numbers 0104 and 0107 are caused by an incompatibility in the format of the hard disk. A 0104 means that the partition size of the hard disk does not appear to be compatible. The partition size must be 2.5 mb or more. A 0107 means that the definition of the partition appears to be less than 2.5 mb, even if the partition size is 2.5 mb or greater. In both cases, the hard disk cannot be validated as a true hard disk, and the install will not be completed. It is also possible to get these error numbers during uninstall.

The 0104 error number is generated if you try to install to a Novell file server's hard disk. The format of the hard disk produced by Novell's operating system is not compatible with the format produced by PC/MS-DOS. The key disk approach is only way to run on a Novell file server.

SUPERLoK does not install to any hard disk accessed as a logical drive. A logical drive can be described as a pointer to a physical drive. For example, a hard disk physically defined as C: can also be defined as logical drive D: using appropriate software. SUPERLoK will install to C: in this case, but not to D:.

The DOS ASSIGN command was specifically designed to allow access of a physical drive as a logical drive. Local Area Networks, such as Novell and IBM PC-NET, allow the physical hard disk of the file server to be defined as a logical drive on a workstation. SUPERLoK will not install to a file server from the workstation.

0120

RAM disks and disk-cacheing software are not supported during install or uninstall. Reboot without memory-resident utilities or RAM disks, and try again.

0173, 0176

The hard disk protection system has been damaged. This is most likely due to the use of the RESTORE command to the root directory of the hard disk. The copy of the product has been lost. Attempt to uninstall. If the message "Product protection system damaged" is displayed, answer Y and reinstall all protected products from System Disk #1 Backup provided with the package.

0233

Many hard disks are formatted with a format utility other than the PC/MS-DOS FORMAT command. Some of these format utilities create a File Allocation Table (FAT) in eight sectors, irrespective of its size. SUPERLoK assumes that the IBM PC-XT and compatible computers have a 12-bit FAT in six sectors, and that the IBM PC-AT and compatible computers have a 16-bit FAT in eight sectors. Call Ashton-Tate Software Support if you get this error number during an install.

0315

Cannot install an older version of the product over an existing install of the current version. Install into a different subdirectory, or uninstall the older version before installing the newer one.

0370

The hard disk appears to be formatted with a cluster size greater than 64K. Reformat the hard disk with a cluster size of 64K or less, and try again.

0835

A DOS error has been detected while accessing one of the files on System Disk #1. The error is possibly caused by a root directory RESTORE of the hard disk. The hard disk may have lost clusters. Run CHKDSK/F on the hard disk and try again. Try again with another System Disk #1.

0846-0848

The root directory of the hard disk containing the SUPERLoK support files has been RESTOREd. All products previously installed will have to be reinstalled.

0850

The installed copy cannot be validated. This occurs when an uninstall is attempted to a System Disk other than the one originally used to install. Use the original disk to uninstall.

64, 512, 1024, 2048

These "Unable to run on this machine" error numbers are caused by a hardware failure. Run a diagnostic routine on the computer, floppy disk drive, and hard disk to determine the specific cause.

8000-8855

Any 8000 error number during install is caused by a hardware problem, specifically with the floppy disk drive or the floppy disk drive controller card. The problem may be caused by: a dirty head in the floppy disk drive, a fluctuating rotational speed of the floppy disk drive, or a density mode other than 360K. A 1.2 mb floppy disk drive is supported only in its 360K mode. Type DIR A: to force a 1.2 mb floppy disk drive into its 360K mode. A fast clock speed can also cause problems.

8016

The most common error number returned from this group is 8016. This error means that the floppy disk drive is misaligned. This message corresponds to the DOS error message "Data Error Reading Drive A:."

8128, 8728

This is a timeout error number, and is returned when installing or uninstalling. The same timeout error is displayed as 80 when running the software from System Disk #1. A timeout error is caused by one of the following:

1. The computer's clock speed is too fast or too slow. Make sure that the speed of the computer is not faster than 8MHz.
2. The floppy disk drive is too fast or too slow in comparison to the speed of the computer. Make sure that the drive is rotating at speeds compatible with IBM's specifications.
3. Memory resident utilities can interrupt the operating system's normal functions for their own use.

8828

This install error number is related to the runtime error number E4. There are two possible causes for this error message:

1. If 8828 is returned during installation but E4 is not displayed trying to run the software, then System Disk #1 has been damaged. The computer may lock up or display graphic characters on the screen. Request a replacement disk.
2. If 8828 and E4 are returned, the disk in the floppy disk drive is an unauthorized duplicate of the original System Disk #1. Install or run from the original System Disk #1.

9040-9370

This group of error numbers refers to a failure in the validation process of the install count on System Disk #1. Specifically, this count cannot be updated. 9340 and 9370 refer to the count on the hard disk. Try to install or uninstall. Try it on a different disk drive, on a different computer, or with another System Disk #1. Make sure that your equipment is IBM-compatible and is in good working order.

If you have encountered an error message or error number during an installation with SUPERLoK that is not covered in this section, call the Ashton-Tate Software Support Center.

USAGE TIPS

dBASE III PLUS

by Christopher White

Accessing Filenames with No Extensions

In dBASE III PLUS, you can now access and create files with no extensions. To access or create such a file, use the double period (..) in place of the extension. For example, you can access an external file with no extension in the APPEND FROM command. Virtually all dBASE III PLUS commands that operate on files support this capability.

The following list of command lines show a number of ways to work with these files.

```
* —-Import a file with no extension.
APPEND FROM Yourfile.. SDF
* —-Export a file with no extension.
COPY TO Yourfile.. SDF
* —-Open a database file with no extension.
USE Yourfile..
* —-Rename a file with no extension.
RENAME Yourfile.. TO Yourfile.TXT
```

Note that DIR does not respect the (..) notation. You must instead use the standard wildcard notation.

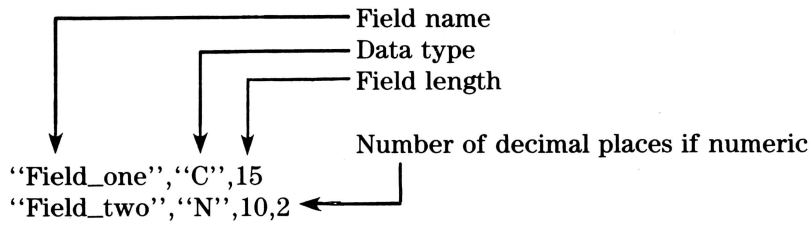
CREATE FROM

The CREATE FROM command is used to create a database file from a database file that contains the target database file structure as records. This a very useful but not well understood aspect of dBASE III PLUS. It can be used as a vehicle for transferring file structures from other processors such as spreadsheets, word processors, and mainframes. As an example, your mainframe consultant could add the target dBASE III database file structure as a delimited file to the download package he sends you. It then would be an easy matter to CREATE the target database file structure FROM the extended structure definition, and then APPEND FROM the downloaded delimited data file. Quite nicely, this would free you from knowing or having to CREATE the target database file structure yourself.

If this prospect intrigues you, the structure of the delimited extended file must be as follows:

Field	Field Name	Type	Width	Dec
1	Field_name	Character	10	
2	Field_type	Character	1	
3	Field_len	Numeric	3	
4	Field_dec	Numeric	3	
** Total **			28	

Each record of the delimited extended file must have fields equivalent to the one listed above. The file should be a standard delimited file obeying all the rules of the delimited file structure. The following demonstrates what a typical delimited extended file looks like.



To import this structure into dBASE III PLUS and translate it into a database file structure, perform the following steps.

```
* —-Create mechanism for structure translation.
USE <any file>
COPY STRUCTURE EXTENDED TO Temp
USE Temp
ZAP
* —-Bring the structure to translate into the mechanism.
APPEND FROM <your structure> DELIMITED
USE
* —-Translate your structure into a database file.
CREATE <your file> FROM Temp
ERASE Temp.DBF
```

REPLACE

The REPLACE command can be used to change the contents of fields in work areas other than the currently selected one in two different ways: using SET FIELDS TO <field list> to create a global field pool, or using an alias before the target field name. For example:

```
* —-REPLACE with SET FIELDS.
SELECT 1
USE Fileone
SELECT 2
USE Filetwo
SET FIELDS TO Fileone->Fieldone, Fieldtwo
REPLACE Fieldone WITH Fieldtwo
* —-REPLACE without a fields list.
SELECT 1
USE Fileone
SELECT 2
USE Filetwo
REPLACE Fileone->Fieldone WITH Fieldtwo
```

dBASE III PLUS Administrator

by David Howlett

"File is in use by another"

The message "File is in use by another" results from an attempt to USE a read-only database file with the dBASE Administrator running in single-user mode.

To avoid this situation, use Protect to prevent editing of database files as opposed to making the files read-only.

BACKUP and RESTORE

You can BACKUP and RESTORE all dBASE Administrator files without concern, they are not copy-protected. The only disks copy protected in the dBASE III PLUS or LAN PACK packages are System Disk #1, System Disk #1 (Backup), and the Access disk.

Debugging Install Problems

There are several commands in dBASE III PLUS that can assist in debugging installation problems. The following is a list of command and debugging strategies.

1. Is the dBASE Administrator running under a network? The dBASE Administrator can run in single-user or LAN mode. Use the command DISPLAY USERS to test if dBASE Administrator is operating under a network. In single-user mode, DISPLAY USERS returns no messages. In LAN mode, it lists the current users in the system.

2. Are you executing dBASE III PLUS or the dBASE Administrator?

   The VERSION() function can be used to determine this. It returns either "dBASE III PLUS version 1.0" or "dBASE Administrator version 1.0" depending on what software you are running.

3. What operating system are you using?

   The OS() function can help you determine this information. It returns the version of DOS you are running under. Note, however, it does return any network information.

4. What is the read-write status of a file?

   The DOS 3.1 command ATTRIB <filename> can be used to display the read-write status of the specified file. If there is an uppercase R in front of the filename, the file is read-only. If there is no uppercase R, then the file is read-write. If you are operating on Novell, use the Novell FLAG <filename> command. It functions similarly to ATTRIB but lists more detailed information about the file's attributes.

5. What is the lock status of shared files? The IBM PC-NET command NET FILE, if executed on the server, will list information on the lock status of shared files.

6. What logical drives are assigned on the network?

   The IBM PC-NET command NET USE, lists all logical drives assigned to that user. The Novell command MAP the is equivalent command for NET USE on Novell.

Documentation Errors

1. Page 5-25 of the Networking section of the **dBASE III PLUS Reference Manual** shows the following command line.

   CASE ERROR() = 158

   This command is supposed to trap the "File is in use by another" condition. The error number, however, is incorrect and the command line should read:

   CASE ERROR() = 108

2. There are coding errors on pages 4-18, 5-27, and 5-30 of the Networking section of the **dBASE III PLUS Reference Manual**. The command line,

   IF TIME = 250

purports to test if an attempt to lock a database file failed. It is not, however, a reliable coding method and should be changed to

```
IF .NOT. FLOCK()
```

3. On page 4-18 of the Networking section of the **dBASE III PLUS Reference Manual**, the command

   ```
   times = 1
   ```

   should be inserted immediately before the SKIP command. The routine on the following page is an error handling routine executed if SKIP encounters a locked record and expects the variable, times, to be reset each time it is called.

4. On page 5-30 of the Networking section of the **dBASE III PLUS Reference Manual**, the UNLOCK command should be placed after the READ command.

5. Page 3-24 of the Networking section of the **dBASE III PLUS Reference Manual** states that "File and field privileges can be used to override the file access read/write attribute established at the operating system or network shell level." This is incorrect. Attributes of directories and files established at the network level always have precedence over the dBASE Administrator Protect mechanism.

LIST

The LIST command is designed to display "Record in use by another" if a record is locked by a different workstation with RLOCK(). This performs according to expectation unless record number 1 is locked with RLOCK(), in which case blank data is displayed for the record.

There is no work-around for this situation.

MODIFY STRUCTURE

1. MODIFY STRUCTURE generates the error "NET 803: Network path not found" if the database file is in the root directory of any physical drive or logical drive of the IBM PC-NET network. Even if network drive F: is attached to the subdirectory \DBASE on the file server, it still belongs to the logical root directory of drive F:. The work-around is to move the file to a subdirectory, or to COPY the file to a temporary file, MODIFY the structure, then APPEND the records from the temporary file. A different error message will appear on other networks.

   ```
   COPY TO Temp
   MODIFY STRUCTURE
   ```

   After receiving the "NET 803" error message, you must press A to abort. The database file structure will have been modified but zero records will be appended to the file. You must then APPEND the records FROM Temp.

   ```
   APPEND FROM Temp
   ```

2. MODIFY STRUCTURE generates the error "File is already open" if the database structure contains a memo field and there are no records in the file.

   The work-around is to add one blank record to file.

SET DELETED ON

SET DELETED ON can affect the FIND command when there is more than one record in the database file with the same index key. For example, suppose there are two Johnsons in the database file. The first is marked for deletion, and the second is locked with RLOCK() at a different workstation. If SET DELETED is ON, and you try to FIND Johnson, you will get the message "No find" instead of the expected "Record is in use by another." Under any other circumstance, a FIND on a record locked with RLOCK() returns the message "Record is in use by another" and positions the record pointer to that record.

There is no work-around at this time.

Framework II

by Chris Lo Vasco

Named Ranges

Spreadsheet users often use the same cell ranges repetitively in their spreadsheet frames. It is convenient to be able to give such a range a name so that writing formulas becomes an easier task. While "named ranges" is not an option in the pull-down menus, it is easily done by a macro. To use the following macro, type it into the formula of an empty frame, and label the frame {Alt-R}. **MOVE (F7)** the frame into the Macros section of the Library cabinet. Next, create a frame in the Library, at the same level as the Phone Book, and label it Ranges. Finally, create a subframe in Ranges and label it Dummy.

```
; Create a named range
; by Kent Irwin
;
@local(rng,nm),
@eraseprompt,
@performkeys("{Ctrl-Uplevel}"),
rng := @inputline("Cursor point to the range "&
     "to be named (Uparrow).",,#YES),
nm := @inputline("Give a name to the range."),
@echo(#OFF),
@performkeys("{Ctrl-L}GLibrary.Ranges.Dummy{Ins}"),
@performkeys("{Ctrl-C}E"&nm&"{Return}{Ctrl-Uplevel}{Return}"),
nm := "Library.ranges."&nm&":="&rng,
@nm,
@performkeys("{Ctrl-L}G{Ins}"),
@echo(#ON)
```

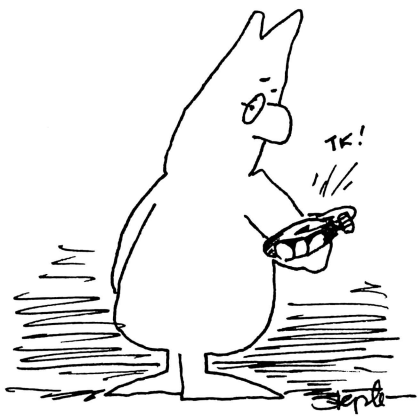
When you want to name a range, simply press **Alt-R**. You will be prompted to cursor-point to the range you want to name. Then you will be asked for the name of the range. A frame will be created in Library.Ranges containing the region reference you specified. To use the range name in a formula, substitute the name for any function argument that would normally require a region reference. For example, use the Alt-R macro to define the name "amounts" as the region Sheet.B2:Sheet.B10. Then use the name in a formula to sum the values in the region:

@sum(amounts)

Elapsed Time

There have been numerous inquiries about calculating a true elapsed time from a FRED date or time function. The following user-defined function, named Elapsed_Time, requires that two parameters be passed, the starting and ending times. These times must be actual date-type values created with the **@datetime** function. The returned value of Elapsed_Time is a character string consisting of the elapsed hours, minutes, seconds and milliseconds displayed in the format HH:MM:SS.mm.

This program can be placed in the User-defined functions section of the Library. It can be called from anywhere on the desktop using @Elapsed_Time(starttime,endtime), where starttime and endtime can be spreadsheet cell or database field references.



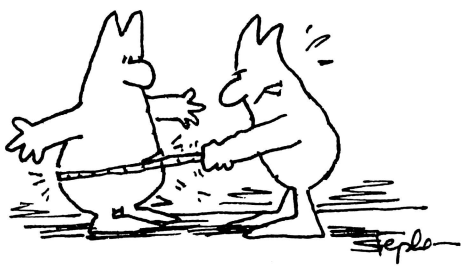

```
; Elapsed_Time function
; by Chris Lo Vasco
;
@local(elapsedhrs,elapsedmin,elapsedsec,elapsedmilsec,beginhrs,
          beginmilsec,endhrs,endmilsec),
; Calculate the hours expressed as hours and the minutes,
; seconds and milliseconds expressed as milliseconds for the
; starting and ending times.
endhrs:=@value(@mid(@time3(@item2),1,2)),
beginhrs:=@value(@mid(@time3(@item1),1,2)),
endmilsec:=(@value(@mid(@time3(@item2),4,2))*6000)+
           (@value(@mid(@time3(@item2),7,2))*100)+
           (@value(@mid(@time3(@item2),10,2))),
beginmilsec:=(@value(@mid(@time3(@item1),4,2))*6000)+
             (@value(@mid(@time3(@item1),7,2))*100)+
             (@value(@mid(@time3(@item1),10,2))),
;    Calculate the elapsed time.
elapsedhrs:=@diffdate(@item2,@item1)*24+(endhrs-beginhrs),
@if(endmilsec<beginmilsec,@list(elapsedhrs:=elapsedhrs-1,
     endmilsec:=endmilsec+360000)),
elapsedmilsec:=endmilsec-beginmilsec,
elapsedmin:=@int(elapsedmilsec/6000),
elapsedmilsec:=elapsedmilsec-(elapsedmin*6000),
elapsedsec:=@int(elapsedmilsec/100),
elapsedmilsec:=elapsedmilsec-(elapsedsec*100),
elapsedmin:=elapsedmin/100,
elapsedsec:=elapsedsec/100,
elapsedmilsec:=elapsedmilsec/100,
;    Return the elapsed time as a string.
@return(
```

```
     @integer(elapsedhrs) & ":" &
        @mid(@decimal(elapsedmin),
             @scan(".",@decimal(elapsedmin))+1,2) &
      ":" &
      @mid(@decimal(elapsedsec),
   @scan(".",@decimal(elapsedsec))+1,2) &
"." &
@mid(@decimal(elapsedmilsec),
@scan(".",@decimal(elapsedmilsec))+1,2)
)
```

Calculating the Overall Width of a Spreadsheet

How many times have you wished that there was an easy way to calculate the total width of a number of spreadsheet columns or database fields for formatting your printing? The following macro will do just that.

Add this macro to the Macro section of the Library so that it will be available at all times. To do this, simply create an empty word frame in the Library and label it {ALT-C}. Enter the program listed below into the formula of {Alt-C}.



The macro can be invoked from anywhere on the desktop, and the proper frame selected by typing in the proper response to the prompt "Enter name of spreadsheet or database" (it must be located on the desktop). After this has been entered, you will be prompted for the beginning and ending columns (enter the column labels or field names only). As soon as these items are defined properly, the macro will step through the frame and display the combined width at the bottom of the screen.

```
; Calcsize
; by Chris Lo Vasco
;
@local(frame,begin,end,walk,characters,retval,return,region,display),
return:=frame:=@setselection,
@if(@scan(".",frame)>0,frame:=@mid(frame,1,@scan(".",frame)-1)),
@eraseprompt,
begin:=end:=" ",
@while(@iserr(@list(
     frame:=@inputline("Enter the name of spreadsheet or database",
     frame,#YES,#YES,#YES),
     begin:=@inputline("Enter starting column",
          begin,#YES,#YES,#YES),
     end:=@inputline("Enter ending column ",
          end,#YES,#YES,#YES),
     @if(@frametype(frame)=7,
         region:="@reset(" & frame & "." & begin & ":" & frame &
              "." & end & ")",
         region:= "@reset(" & frame & "." & begin & "1:" & frame
```

```
                & "." & end & "1)"
     ),
     @setselection(frame)
     )), ; End list and iserr.
frame:=frame
),
@performkeys("{Dnlevel}{Ctrl-Home}"),
@while(@and(@not(@isna(@region)),@iserr(@region)),
     begin:=@inputline("Enter starting column ",
          begin,#YES, #YES, #YES),
     end:=@inputline("Enter ending column ",
          end,#YES, #YES, #YES),
     @if(@frametype(frame)=7,
          region:="@reset(" & frame & "." & begin& ":" &
               frame & "." & end & ")",
          region:= "@reset (" & frame & "." & begin & "1:" &
               frame & "." & end & "1)"
     )
),
@region,
@eraseprompt,
walk:="@next(" & @mid(region,8,@len(region)-8) & ")",
retval:="@get(" & @mid(region,8,@len(region)-8) & ")",
@inputline("Press return to begin the count. "),
@while(@retval<>#NULL!,
     @performkeys("{F4}"),
     characters:=characters+@panel1,
     @performkeys("{Esc}{Rightarrow}"),
     @walk
   ),
@setselection(return),
@prompt("The combined width of columns " & begin & " through " &
end & " is " & @integer(characters) & " characters."),
@beep
```

Point and Dial—Hanging Up the Phone

When you select the Point and Dial option in the **Apps:Telecommunications** menu, Framework II should dial the number that is currently selected by the cursor and prompt you to pick up the phone and press Spacebar. If the modem doesn't hang up the phone when you press Spacebar, then the DTR signal is probably not working properly. Make sure that your modem switches (DIP or software) are set to make DTR active. If the phone still doesn't hang up properly, check pin 20 of the serial cable to be sure that it exists and is connected correctly.

Spell Checker Macro

Here's a macro that will enable you to check the spelling of a word or phrase at any time, without interrupting your work. It should be placed in the formula of an empty word frame and installed in the Macro section of the Library cabinet. When the macro is invoked, you are prompted to type a word or phrase on the edit line. After the spelling check, press a key to return to your work.

```
; Word check macro
; by John Coanda
;
@local(word,count),
```

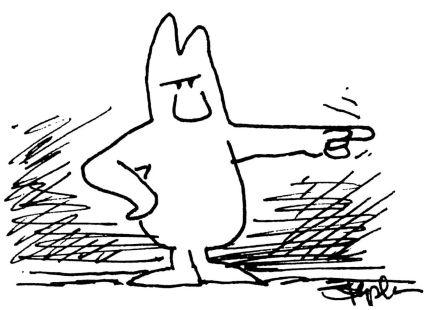
```
count:= 1,
word := @inputline("Enter word(s) to spellcheck,"&
     &"or <return> to exit."),
@echo(#OFF),
@if(word <> #N/A!,@list(
     @performkeys("{Ctrl-Uplevel}{Ctrl-C}E"),
     @performkeys("Spelling Check frame{Return}"),
     Spelling Check frame := word,
     @echo(#ON),
     @performkeys("{Ctrl-A}SB"),
     @while(count < 50,
          count := count+1
     ),
     @prompt("Hit any key to finish",5),
     @prompt("Hit any key to finish",57),
     @nextkey,
     @performkeys("{Del}{Esc}"),
     @echo(#ON)
))
```

Right-Justifying Numbers for Mailmerge

The Mailmerge capability of Framework II ordinarily converts numeric fields from the merge database into character strings before placing them into the merge document. This naturally produces numbers that are left-justified in the printed document, with respect to placement of the field markers. However, to merge several numeric fields into a tidy column and align the decimal points, the numbers must be forced to right-justify.

To produce a right-justified field in a database, create a new field column and put the following formula behind the fieldname. Assume that the numeric field is called Field1 and the new field is called Field2.

```
Field2 := @rept(" ",12-@len(@business(Field1)))&@business(Field1)
```



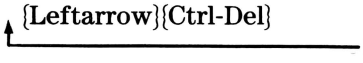
Now, when you set up your master letter for the Mailmerge, use <Field2> for the field marker instead of <Field1>.

Deleting Spaces as Words

Framework II treats words in a way that sometimes seems confusing. It does not, for example, treat spaces as a word. If you have a line indented with spaces and use **Ctrl-Del** to delete them as word right, you will find the word immediately to the right of the block of spaces is deleted as well.

This behavior has its merits, but you probably want a way to delete a block of spaces without inadvertently deleting text. The secret is to replace the first space character in the block with a hard space. A hard space is entered by pressing **Ctrl-Space** instead of **Spacebar**. Framework II treats blocks of spaces that begin with a hard space as a word. You can now delete the spaces as you would any other word. You can see the difference between a soft and a hard space by displaying hidden characters with the **Display Hidden Characters** option in the Edit pull-down menu. The soft space is a small dot and the hard space is a graphic half-block character.

The easiest way to make use of this capability is to use the **Macro/Abbreviation** menu to create a macro that inserts a hard space and then deletes word right. The following set of keynames constitutes the keystrokes you want to record into your delete spaces macro.



Trace

If you have been writing a lot of FRED code lately, you probably need a quick way to turn Framework II's trace facility on and off. Clearly, doing it by hand is awkward. The following macro allows you to turn trace on and off from a menu. When you invoke the trace macro, you get a horizontal menu giving you the choices of on or off. If you choose on, the macro creates a frame called "trace" that will hold the results of the trace operation and then turns on the trace function. If the trace frame already exists, it uses that frame for the trace results.

To set up this macro, perform the following steps.

1. In your Library, create a frame with two subframes at the same level of hierarchy. Name the top-level frame with the key name of the macro, {Alt-S}, for instance. Name the two subframes On and Off.

2. In the formula area of the macro frame, enter the following formula:

   ```
   @menu([ { Alt-S } ])
   ```

   To make this easy, use cursor pointing to define the macro name reference.

3. Next, go to the On subframe, enter the contents area, and type a message describing the menu choice. An appropriate description might be "Set Trace On." After this, enter the formula area with **EDIT FORMULA (F2)** and **ZOOM (F9)**, and type the following formula:

   ```
   ; Set up.
   @trace(#OFF),
   @echo(#OFF),
   ; Create a trace frame, if there isn't one on the desktop.
   @if(@iserr(@frametype("trace")),
       @performkeys("{Ctrl-Uplevel}{Ctrl-C}Etrace{Return}")
   ),
   ; Turn on the trace function.
   @trace(trace,#ON),
   @echo(#ON),
   @quitmenu
   ```

4. Then go to the Off subframe, enter the menu message into the contents area, and type the following formula into the formula area as you did for the On option:

```
; Turn off trace function.
@trace(#OFF),
@quitmenu
```

5. Press **Alt-S** whenever you want to begin or end a trace.

Corrigenda

Please note the following correction to the July 1985 issue, on page 8, at the beginning of the "Change Summary for dBASE II version 2.43*," under the heading "Changes that Impact Existing Systems." Item (2) refers to a CP/M-86 format of version 2.43*. This is an error. This format does not exist for this version of dBASE II. (Please note also that this "Change Summary" recently appeared in the ***TechNotes*** Digest section of the April/May/June issue of the *Ashton-Tate Quarterly*.)

ANOMALIES

Framework II

Edit:Undo and Formulas

There is an anomaly associated with the **Edit:Undo** menu option when undoing an accidental edit formula. If you begin typing a new formula into a spreadsheet cell that already has a formula (automatically deleting the old formula), but change your mind and delete the old formula on the edit line, and then select **Undo**, the system will hang.

The work-around to this problem is not to delete the accidental formula, but instead to accept it (by pressing **Return**) and then select the **Undo** menu option. As long as the accidental formula is not deleted while on the edit line, an **Undo** will work just fine.

Extended Memory an Cell Overlap

There is an anomaly in Framework II extended memory that could hang the system or cause corruption in the spreadsheet being printed. This is only likely to happen under the following circumstances:

1. A spreadsheet contains a text cell that overlaps the cell to its right (the text entered is longer than the cell is wide),

   AND

2. The overlapping text is truncated by a value in the second cell,

   AND

3. The spreadsheet is printed while extended memory is active.

Avoid this problem by entering only as much text as the cell can handle without causing overlap, or by sizing the column so that all text fits without overlap.

ON-LINE SERVICES

Do you have a modem? Do you subscribe to CompuServe, The Source, or Onepoint? If so, we have great news for you! Ashton-Tate offers technical support on all of these electronic information services. You can quickly access the kind of quality technical information that you have come to expect from ***TechNotes***, and you can do it through your computer system. To take advantage of this progressive new support method, you must subscribe to one of the services listed below. There are no additional charges for using our online support services, apart from the normal connect-time fees for each service. You can get specific subscription information by calling one of the following numbers:

Service	Subscriber Information	Command to find Ashton-Tate
CompuServe	(800) 848-8199	GO ASHTON
The Source	(800) 336-3366	ATSIG
Onepoint	(800) 222-2250	

To give you an idea of the fast-moving, dynamic support that is happening online, ***TechNotes*** will be publishing regular excerpts from the Ashton-Tate Forum on CompuServe. This monthly material comes from messages our Forum users have posted on the bulletin board. To retain the original sense of this material, we have edited only for spelling, and all message headers have been removed to protect the identities of our users. The italicized text represents the replies (not necessarily from Ashton-Tate) that were posted to specific questions.

Framework II:

After giving up on using DOS 3.1 SUBST commands etc., and also trying to convince Framework II to understand the Novell Network Disks, I finally dug into Novell and, lo and behold, the MAP command worked miracles. Just use MAP to set an unused drive = to your user drive including the subdirectory you want your FW2 files to be in. That means you will set up a subdirectory that's called, let's say, \FRMWRK. My command looked like MAP E: = F:\JFC\FRMWRK.

From then on pointing to E: in Framework II showed me the subdirectory \JFC\FRMWRK which exists on Novell F:. Good luck to you. It stymied a lot of folks here but I have a 45 min drive to work and in that time you can brainstorm a lot of problems.

Novell starts its drive assignments at F (\LOGIN), and reserves the first 5 (A: - E:) as local drives (although you can assign them to the network manually). A DOS assignment (SUBST G:....) with the default lastdrive (E:?) gives a DOS error. A lastdrive of F: or greater causes failure to load the network shell.

.....

1. I have IBM AT, running DOS 3.1, and Framework II. When I use spelling check on a frame called Paper, and then choose "Write Personal Dictionary" after this is done, there is a file called Paper.DCT on the disk. Does this mean that the Personal.DCT was not saved, and if not, what do I need to do to always merge the new words added during the spell check with the main Personal.DCT???
2. I notice that when using Wordstar that word breaks are made automatically by hyphenation, but Framework II does not do this. Is this planned for a later release???

Additions to an existing dictionary, such as Adding a word during a spell check, are automatically saved.

Write Personal Dictionary File is used to add words to an existing dictionary, OR to create a new one.

To ADD words to an existing personal dictionary, load the dictionary file from the disk using the Get File by Name menu option or by pointing at the file within the disk cabinet and pressing Return. This creates a word frame on the desktop with the name of the personal dictionary as its label and with each word in the dictionary on a separate line. Now just edit or add words in the word frame. When finished editing, place the cursor on either inside the word frame or on its border, and select the Write Personal Dictionary File command. This then saves the word frame as a personal dictionary.

Another use for the Write Personal Dictionary File command is to create a NEW Personal Dictionary from any Framework II frame: spreadsheet, outline, database, word frames, but not graph frames. Word frames are the obvious choice. What you do here is make a frame on the desktop containing your list of words. You can type the words into a frame, separating individual words with spaces, tabs, periods, or Returns. It doesn't matter if you have several occurrences of the same word because only one occurrence of it will appear in the resulting personal dictionary file.

Once you get your words into a frame, simply name the frame, and select the Write Personal Dictionary File option. Your new personal dictionary will be saved with a filename consisting of the first eight characters of the frame label, and the extension .DCT.

Framework does not do automatic hyphenation at this time. It is on the wish-list, however. As usual, I can't say anything definite about what the future holds.

.....

I set up the RamPage as a ram disk in expanded memory. I still have problems loading Framework II in DESQview. I have talked to AST. They say Framework II should load and use extended memory without the Hicard. I followed all their directions. Still didn't work. Getting back with them we went over all my settings, they do not know what is wrong. They are going to go over the situation with Quarterdeck the originators of DESQview. It seems they have not had much experience with running DESQview on a 286 machine. It was set up on one machine there but it was not an IBM AT. In your setup do you have 256 on the motherboard or 512? I've tried it both ways. The thing I can't figure out is that the window available under DESQview to open Framework II in is 490K (according to the MEMORY STATUS program that comes with DESQview) this is quite a bit more than the 455K you get. When you load Framework II under DESQview how much ram does Alt F5 show? Also how much ram is on the Hicard? Mine has 256K. If I get any info from AST when they call back I'll let you know. Thanks again for the help.

I regularly run Framework II under DESQview and it works OK. Rule # 1 - you must have a very large window available for DV to page in. (I open Framework II with 496K) Rule # 2 - NEVER allow Framework II to swap to disk. If you break this rule you'll have to reboot, then run CHKDSK /F to recover a very long lost chain (about 2MB) Rule # 3 - Load Framework II last. It will grab all of the avail memory on the Rampage as its own. Alt F5 shows me 1.5 MB when I load Framework II alone under DV and 1.8 MB when I run without DV. Note, I'm running on an XT with 640K on motherboard (set both mem switches off- not documented) and a 2MB Rampage.

.....

Just getting into FRAMEWORK II, looks like a super program. Am having problem bringing previous filespecs (frames) into a constructed outline...without duplicating its frame name. I have an outline that looks like this:

I. GENERAL
  - GENRL
II. MAIN MENU
  A. HISTORY FILES
  - HIST
  B. NEW FILES

When I print an index (table of contents) I would like to eliminate the -GENRL and the -HIST which are framenames of the text MOVED inside the GENERAL and HISTORY FILES containing frames from "boilerplate" files. But, I would like to keep all of the outline headings and pagination. That's a great feature. Any suggestions for this new user?? Thanks.

Toggle your outline to "Frames" view with F10, and close the frames you don't want to print (press return to close a frame). Then select Skip Closed Frames in the Print:Output Options menu.

.....

I'm a new FRAMEWORK II user but already hooked. But I've got some problems with applications that I hope you can help with.

1. I use SIDELINE to print Framework II spreadsheets, and they will not glue, apparently due to a line feed sent by Framework between segments. How can I edit or suppress this?
2. I need to set up a Mailmerge application which will use a database frame to print to the top portion of a bill, and obtain user input for the bottom portion. What is the best way to approach this?
3. FRED programs are having some problems - I need the equivalent of a Basic END command. I call a subroutine to branch out of a program (to Exit for example), and it calls and executes, then returns to the main program and continues on. How do I define a branch so it will not return? I'm too used to a line number concept - that'll take a while to lose.
4. Tried to use SETUP with EGADCL driver - how do I set multicolor desktops? Looking forward to becoming a serious FRED person - I sure would be appreciative of any help you and other forum members may be able to give me along the way....

I'm not very familiar with Sideline, but I assume it uses ASCII files. You can try printing to a DOS file, with margins, (top,bottom, left) all zeroed out, right margin set to 255, and no special printing instructions. This should produce as plain a file as possible. Even so, your printer driver may be sending codes anyway, that you will have to edit out. For the Mailmerge APP, try filtering out all records but the one you're going to print, put the database in forms view (F10), use @inputline to get the user data and store it to a special field in the database. Then print the form view. There is no END in FRED. You must structure your subroutine calls so that they "fall through" and naturally terminate. In other words, all subroutine calls must return. You can set the foreground and background colors in SETUP; select Configuration (main menu), and then Secondary Hardware. You will have choices of the 0-63 EGA colors.

---

dBASE III PLUS:

Regarding labels, how do you suppress the first field when it has been left blank? Example: Label Contents 1: Sex, FName, LName
2: Title
3: Company
4: Address
5: City,'','',State, Zipcode

If Jane Doe's marital status was unknown and we chose to leave it blank, with the above format it comes out:

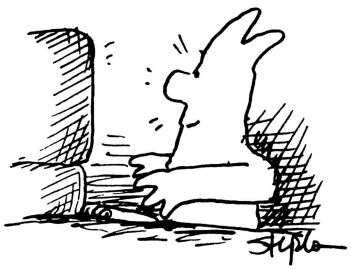
Jane Doe
Supervisor
Doe's Company
777 Main Street
Stamford, Ct 06905

I would like to be able to suppress that first space. Thanks

The comma in a label field definition will automatically place a space between fields. Avoid the comma where you don't want a space. Try this as the first line of the label form: IIF(sex=" ",TRIM(sex),TRIM(sex)+" ")+FName,LName

.....

How are people making out with the Catalog and View commands? I recently demonstrated the application generator to a number of PC novices who were impressed and felt reasonably comfortable with it. Comments?



I use Catalog and View files in my beginning dBASE seminars, which are pretty much "ASSIST-oriented" since dBASE III PLUS. They work well for the most part, and make it easy to go back to a previous project. I would never use them in a program, too opaque (what happens if the .CAT or .VUE files get corrupted?).

I have had problems with the catalog command when running applications created before I upgraded to dBASE III PLUS. It is not consistent in asking for info that files that are not currently in the catalog are called for. A call to Ashton-Tate support confirmed that they are aware there is a problem.

I like the catalog feature for newer users who often get lost between all the different files "Which indexes should I set, which report goes with which database, etc" problems are mostly taken care of. Thanks for the information on its limitation. This month's TechNotes [March '86] has a detailed article on catalogs and linked programs which make use of the feature.

.....

I read in your recent magazine that a semicolon in a report form will produce a carriage return, line feed. I can't make it work but it would be very useful. Any suggestions???

<fieldname> + ";" + <fieldname>

will do it.

.....

I have a list of names indexed on Last+First, which gets all the Smiths sorted from Alice to Winston correctly. But how do I get the right Smith, or even near the right Smith, using SEEK then BROWSE? When I SEEK Smith, the record pointer goes to the first Smith which may be several pages from the one I am looking for.

It will make it easier if you have names in upper/lowercase to INDEX ON UPPER(SUBSTR(Last,1,n))+UPPER(SUBSTR(First,1,n)), then force upper on the input of the search key. I throw in the UPPER 'cause I use it a lot. Also makes SEEKing easier, and you can keep "n" to a multiple of four. When you do a SEEK, FIND or LOCATE, the record pointer goes to the first occurrence in the file of what you are looking for. If you are indexed on one field, and you want to do a search on two fields, you can:

STORE "Smith" to Mvar
SEEK Mvar
LOCATE FOR SecondFld=SecondVar WHILE Keyfield=Mvar

The above assumes dBASE III PLUS is being used, which allows the use of both the FOR and WHILE modifiers to the LOCATE command. Previous versions of dBASE III will not allow both to be used simultaneously.

The method we frequently use to SEEK or FIND an individual is to create a memory variable. By the way, I usually INDEX ON UPPER(Last) + UPPER(First). Assume the length of your last name field is 24. The code then goes something like this:

SET EXACT ON
llen = LEN(Last)
memvar = UPPER(Last) + SPACE(24-llen) + UPPER(First)
GO TOP
SEEK memvar
(or FIND "&memvar")

.....

Is there a way to strip the spaces and CR's from a memo when displaying it to SET ALTE TO filename. There is also a leading space I would like to strip. The purpose is to import the file to FWII. I am familiar with the CRstrip Framework II program that was in Sept TechNotes but this does not take care of the spaces. The leading space can be easily taken care of by a FWII prg. Thanks for any help!

You must be using the DISPLAY command to list out the memo fields. Even with DISPLAY...OFF, you can't get rid of all the leading spaces. I would use the ? command to print the memos to the ALTERNATE file, and just use a simple DO WHILE prg to access all the records. This would be a little less trouble than the Framework macro.

I used the ? COMMAND in my prg. Got rid of the leading space. Still have the trailing spaces (which make the fixed field length) and the carriage return. I know I can build a FWII prg to do the job. Thanks!

.....

MULTIMATE TECHNICAL SUPPORT

Submitted by Liz Burke

MultiMate Magic

"MultiMate Magic" presents technical tidbits of information in response to "What If" situations. You can think of these as **Usage Tips**, in that they offer tips in using the product.

Using External Copy

WHAT IF...you are using the External Copy command and accidentally highlight beyond the page you want to copy? When this happens, pressing **Uparrow** does not return the cursor to the previous page. However, pressing **PgUp** or **Ctrl-PgUp** does return the cursor to the previous page. From here, you can use the **Uparrow** to move to the end of the area you want to highlight.

Justified Type

WHAT IF...you want a footer at the bottom of each page of a right justified document but find that the last line of the first page is printing unjustified? Set up your first page with nothing but carriage returns to the line where you want the footer to begin. Then type in the footer and go to page 2 and type your document. When you want to print, enter 000 in the "Header/Footer first page number" default on your print screen. Your first printed page will have just the footer on it, and all subsequent pages will print justified with the correct footer page number.

Diablo 630 Underlining

WHAT IF...you are using MultiMate version 3.30 or higher, and underlined blank spaces, such as those for signature lines, do not print out underlined with your Diablo 630 printer? The solution is to access the Printer Action Table for the Diablo 630 printer and delete the codes for underlining.

Superscripts and Subscripts

WHAT IF...you need to have superscripts and subscripts in your document but your printer doesn't have the capability to print them? You can simulate them by setting the line spacing in your format line to three (triple spacing). The superscripts and subscripts then print out in the lines above and below the text. This happens because triple spacing will give the text, superscripts, and subscripts space to print without overlapping.

Backing up Files

WHAT IF...you are getting the error message "Disk Full" after you have created only a few documents? If the total number of bytes in your documents don't add up to the full capacity of the disk, then check the "Modify Document Defaults" screen to see if the "Backup before edit document?" default is set to "Y". Or do a directory of your documents. If you have two files with the same name, one with the file extension .DOC and the other with .DBK, your system is automatically backing up each document. Since document backup uses additional disk space, you may have to put fewer documents on a disk if you wish to use this feature.

Remove Underlines

WHAT IF...you have a MultiMate document with much of the text underlined and you wish to print a copy without any underlining? Instead of retyping the document, you can remove the underlining by converting it (or a copy of the document) to ASCII, selecting "YES" for the ASCII default "Remove Underlining?," and then converting the document back to MultiMate. It will be restored without underlining. For further instruction on file conversion, see the *Advanced User's Guide.*

Merge Print Stopping

WHAT IF...your merge document stops printing after four or five addresses printed correctly? Go back and compare your merge fields from both documents. Either a field does not match, or you may have put in extra spaces after a merge symbol in one of your entries.

Page Length Limits

The following chart has been created to help you avoid the "PAGE FULL" error message. It shows approximately how many lines of text you can type onto a screen page in relation to the length of your format line.

For example, if your format line is 40 columns wide, the maximum page length is 151 lines. It is important to note that bold, shadow, underlining, and other codes entered into your text affect these calculations and may change the number of lines that you can actually have on a page.

Column Width	Lines per page
40	151
45	134
50	121
55	110
60	101
65	93
70	86
75	81
80	76
85	71
90	67
95	64
100	60
105	57
110	55
115	52
120	50
125	48
130	46
135	45
140	43
145	41
150	40
155	39

Pitch Changes

WHAT IF...you wish to use different print pitches within the same document, e.g., the text in 12 cpi and the section headings in 10 cpi? You can change print pitches within a document with the Print Pitch key combination **Alt-C**. Move the cursor to the place in the document where you want to specify a pitch other than the default pitch. (Note: MultiMate's default pitch is 4 which usually gives 10 cpi. You can change the default pitch by editing the printer defaults.) Press **Alt-C**. The Print Pitch symbol will appear on the screen. Enter the pitch indicator number corresponding to the cpi you wish to use. For example, press 5 for 12 cpi. When you have finished entering the text, press **Alt-C** and enter the default pitch indicator number or the number for the next pitch you wish to use. Not all printers support all pitch sizes. See the *MultiMate Reference Manual* for additional information on your printer's capabilities.

HP LaserJet Character Widths

WHAT IF...you are using the HP LaserJet printer with the B, F, or P proportionally-spaced cartridges and you find that tabs and centering are not working correctly when you print? Since the MultiMate Advantage LJETBPS, LJETFPS, and LJETPPS Printer Action Tables do not include character widths, you must also specify a Character Width Table (CWT) before printing. For example, if you use the B cartridge and default pitch 1, choose CWT LBPITCH1. For default pitch 2, use CWT LBPITCH2, etc. Refer to pages 44 and 45 of the June 1986 issue of ***TechNotes*** for more information.

Proportional Spacing and Underlines

WHAT IF...the underlines do not meet when you are printing in proportional spacing? To solve this problem, lessen the value for the underline character in the CWTs. Instructions for accessing and editing the tables can be found in the *MultiMate Advanced User's Guide.*

Tandy 1000 Printing

WHAT IF...you are using MultiMate with a Tandy 1000 PC and are having print problems that include double spacing or the same line printing twice when enhanced print is specified? You are probably using a printer other than a Tandy printer. Since the 1000 automatically issues a line feed command to the printer, you will have to turn line feed off to print successfully. The following steps demonstrate how to do this:

1. Put your working copy of DOS in drive A:. At the A> prompt, type LPINST and press **Return**.
2. At the prompt, "Does your printer perform an Automatic Line Feed After a Carriage Return?" type Y and press **Return**.
3. Type LF and press **Return**.
4. Type MODE LFOFF and press **Return**.

After making this change, you will always have to boot your computer with this DOS disk, but you should have no problems with your printout.

MultiMate PC Questions

The following are technical questions that are commonly asked of MultiMate's support technicians, along with appropriate answers.

Question:
When I type WP, the error message "INSUFFICIENT MEMORY" displays. What can I do to prevent this?

Answer:
Put your PC/MS-DOS disk in the computer and run the CHKDSK utility to see how many bytes of memory are free for MultiMate.

> MultiMate Advantage needs 270,000 Bytes Free
> Version 3.31 of MultiMate needs 233,000 Bytes Free
> Version 3.30 of MultiMate needs 227,000 Bytes Free

Remove any memory resident programs by rebooting your computer.

Question:
I pressed the **F10** key to save my document to my B: drive and I get an error message "Disk in Drive B is Write Protected." How can I resolve this?

Answer:
Remove the write-protect tab from the disk in drive B:.

Question:
Why do I get the error message "Fatal Disk I/O Error (F: /S: /A:):-Please reset System"?

Answer:
Do a directory of the disk to see how many bytes are free. The disk may be full.

Question:
Why to I get the error message "General Disk Failure. Press A to Abort, I to Continue, R TO Retry"?

Answer:
The most common cause for this message appearing on the screen is the use of an unformatted disk as your document disk. Format you disk with DOS.

Question:
Why do I get the error message "Parity Check 1"?

Answer:
There is an error with memory on the motherboard of your computer. Reboot. If the error occurs again, run diagnostics to determine the problem. Static or power surges can also cause this error.

Question:
Why am I getting the error message "Parity Check 2"?

Answer:
There is an error with memory on an expansion board in your computer. Reboot. Static or power surges can cause this error. You can also try to reset the board.

INTERNATIONAL SUPPORT

by Paul Bukauskas

International Support, a new ***TechNotes*** monthly department beginning with this issue, will address the needs of those outside the United States who use Ashton-Tate products. Ashton-Tate now markets the mainstream of its software in every major language of the world, including German, French, Spanish, Portuguese, and Dutch. Other translations are continuously added, each based on the U.S. version of the product.

Primarily, **International Support** will pool the experience and resources of our foreign offices. Here you will find articles that detail specific technical and programming concerns of users overseas; local news about which Ashton-Tate products are available on a country-by-country basis and which language versions are sold in each of these countries; Usage Tips, Anomalies, and Questions/Answers that pertain to these language versions.

We hope you will enjoy **International Support** and use it as a reference for the technical support information—tips, techniques, and programs—on all foreign language versions. To kick off **International Support**, we have listed the Ashton-Tate international subsidiary offices here (reprinted from the January 1986 issue). If you are a resident of a country other than the United States or Canada, contact an Ashton-Tate office in your local area for update information and technical support.

Ashton-Tate UK
Oaklands House
1 Bath Road
Maidenhead, Berkshire
SL6 4UH
ENGLAND
Ph: 44 06 28 33123
TELEX: 846125 ASHTATE G
FAX: 44 628 78 2682

Ashton-Tate GmbH
Hahnstrasse 70
Lyoner Stern
6000 Frankfurt/Main 71
WEST GERMANY
Ph: 49 69 664190
TELEX: 4170348 ASHT D
FAX: 49 69 664 1929

Ashton-Tate BV
Assumburg 73
1081 GB Amsterdam
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Ph: 31 20 462515
TELEX: 12786 DBASE NL
FAX: 31 20 462 620

Ashton-Tate Spain
Rosario Pina, 6-8C
28020 Madrid
SPAIN
Ph: (34) 1 442-3866
TELEX: 47821
FAX: 34 1 279 9837

Ashton-Tate, World Trade Corp.
Success Building
2-11-13 Minami-Aoyama
Minato-Ku, Tokyo 107
JAPAN
Ph: 81 3 479 7191
TELEX: 2422532 ATJAPN J
FAX: 81 3 479 7620

NOTE The policies that are described elsewhere in ***TechNotes*** apply only to the United States (and possessions), Canada, and Mexico. Residents of other countries are encouraged to contact a local Ashton-Tate office for policy information and technical support.

LETTERS

Forced Choice Response with @...SAY...GET

Dear *TechNotes*:

I use dBASE III PLUS. In one of my programs, I want to ask a "Yes/No" question and force a Y or an N response. I have used:

```
STORE " " TO answer
@ 10,10 SAY "Is this correct? (Y/N)" GET answer PICTURE "Y"
READ
```

At this point, a Y appears on the screen in inverse video. However, when the user presses **Return**, a space remains in "answer" and not a Y. Is it possible to ask a question and make sure that either a Y or an N is entered, not allowing **Return** as input?

L.K.

Dear L.K.:

The PICTURE "Y" clause will limit the user to pressing either a Y or an N. However, it still allows the user to press **Return**. The following program code will limit the user to pressing a Y or an N only:

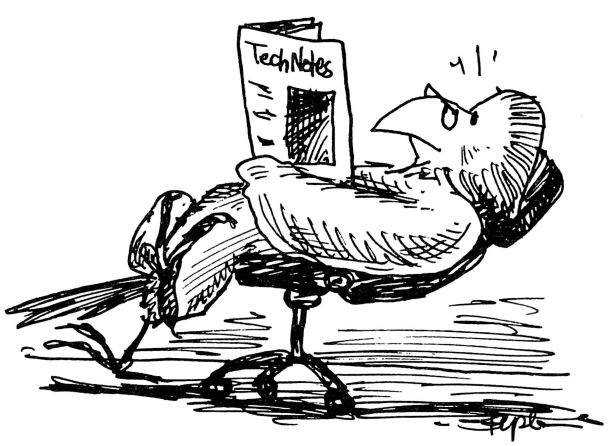
```
STORE " " TO answer
DO WHILE .NOT. answer$"YyNn"
      @ 10,10 SAY "Is this correct? (Y/N)" GET answer
      READ
      ENDDO
```

The first line initializes "answer." The DO WHILE loop is entered and will remain in effect while the answer is not Y or N in either uppercase or lowercase. If any other letter is pressed, the loop will not be exited and the question will be asked again. However, the key that you pressed will be displayed. To get around this, insert the line:

```
STORE " " TO answer
```

just before the @...SAY...GET command line.

This command structure will work in all versions of dBASE II and dBASE III and can be used to limit any printable keys.



IIF( ) Function as an Index Key

Dear *TechNotes*:

I have dBASE III PLUS and a database file which is INDEXed ON Co_name (company name). Why is it that company names that begin with numbers, like 4 Way Trucking and 2001 Janitorial Co., are located at the top of my index file? Is there a way to index my file so that these records are placed at the bottom of the file?

K.W.

Dear K.W.:

Character index files are built on the ASCII value of each of the characters in the field. The ASCII values for numbers 0 through 9 are 48 through 57, whereas letters A through Z have a higher value, 65 through 90. For this reason, fields beginning with numeric data will precede those beginning with alphabetic data.

dBASE III PLUS and the Developer's Release introduced the IIF() function. The following INDEX expression utilizes the IIF() function to check for numeric data and puts it at the end of the file:

```
INDEX ON IIF(LEFT(Co_name,1) > "9", ;
Co_name, ;
CHR(255) + LEFT(Co_name,LEN(Co_name)-1)) TO <file>
```

Notice that this function contains three parts:

1. The condition
2. The logical true result of the condition
3. The logical false result of the condition

The expression in the above example checks to see if Co_name starts with a character greater than a digit. If so, then Co_name is used. If not, then to make sure that it is placed at the bottom of the file, CHR(255) becomes the first character of the index key (since the highest ASCII value is 255), followed by Co_name, except the last character. The reason for this is that the key field must be the same length throughout the index file. If it is not, strange error messages may be displayed and data may be corrupted.

Extending dBASE III PLUS Fields Limitation

Dear *TechNotes*:

I am using dBASE III and I need 600 fields. Does dBASE III PLUS have the ability to handle more than 128 fields? If not, how can I get around this limitation?

D.W.

Dear D.W.:

dBASE III PLUS is designed to handle up to 128 fields per database file. One method of extending this is to USE five related database files in conjunction with the SET RELATION TO command. The SET RELATION TO command allows a database file to be related to another database file through a common key. Since there are five database files, four RELATIONs would be SET (that is, File1 to File2, File2 to File3, File3 to File4, and File4 to File5). If a common key field does not exist, then SET RELATION TO RECNO() INTO <File2>. Here, the common key is RECNO(), the record number.

Another method is to combine several fields into one field. Frequently, users will have several logical fields, and to save space, will set up a character field with the length of the number of logical fields. Each position in the character field will represent one of the logical fields. The user then creates more space available for additional fields. For example, if there are 100 logical fields, create a character field with a length of 100.

The difficulty now is transferring the logical fields into the character field. The first position is easy, but the remaining positions are difficult, because you are actually replacing one character in a string and not the whole string. For example, if a "Y" is to placed in the 50th position of Field, the syntax would be:

```
REPLACE Field WITH SUBSTR(Field,1,49) + "Y" +;
SUBSTR(Field,51,50)
```

dBASE III PLUS and the Developer's Release introduced the STUFF() function which allows you to replace characters inside a string. The STUFF() function contains four parameters. The first parameter is the character string that you wish to alter, the second is the starting position of the character string that you wish to alter, the third position represents the number of characters you wish to remove from the character string, and the fourth is the new string that you wish to insert. The above example could be rewritten as:

```
REPLACE Field WITH STUFF(Field,50,1,"Y")
```

Running Sidekick or TimeFrame with Framework II

Dear ***TechNotes***:

Borland's Sidekick seems to be incompatible with Framework II. So, I decided to get TimeFrame by Enabling Technologies. So far, TimeFrame seems incompatible, too. Is there an incompatibility with either TimeFrame or Sidekick with Framework II?

S.S.

Dear S.S.:

The compatibility problem with Sidekick comes from the way that the screen is handled in versions of Sidekick prior to version 1.56. In all versions, run the SKINST program and configure the system so that, in a graphics mode, it is able to "overlay" its display without any conflicts. Failure to set up Sidekick in this manner can cause problems with the screen display in Framework and other programs.

TimeFrame by Enabling Technologies was written for Framework version 1.0 and version 1.1. Because the FRED language changed between Framework 1.0/1.1 and Framework II, TimeFrame was updated. To obtain this updated version, send your original disk for TimeFrame, along with a letter requesting the new version to:

Ashton-Tate Publications
Attn: Maxine Harris
20101 Hamilton Avenue
Torrance, CA 90502-1319

Please keep the documentation from the original version, as it still applies to the new version.

****

Please direct your technical correspondence to Ashton-Tate Software Support, 20101 Hamiltion Avenue, Torrance, CA 90250-1319. Be sure to include information on your hardware configuration when appropriate, such as the type of computer, printer, and the version of the operating system you are using.

READER SUBMISSION FORM

If you have a programming tip, a handy formula, or a short utility, and you are interested in sharing it with other dBASE II, dBASE III PLUS, and Framework II enthusiasts in a future issue of ***TechNotes***, please read the provisions below. After reading these guidelines, fill out this form and send it along with your submission(s) to the following address. Submissions must be made on disk (IBM or compatible format) in standard ASCII format or in Framework II (.FW2) format.

***TechNotes* Submissions**
Software Support Center
Ashton-Tate
20101 Hamilton Ave.
Torrance, CA 90502-1319

NAME _____ DATE _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE (During normal business hours) (_____) _____ - _____

_____

(SIGN HERE TO ACKNOWLEDGE YOUR UNDERSTANDING OF THE PROVISIONS BELOW)

To establish a clear understanding of the rights and usage of submissions, you are asked to first represent and warrant that:

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Thank you for reading ***TechNotes***. If you do not have a submission for us, write us anyway and let us know what you think about our publication. We certainly appreciate any feedback you may have.

TechNotes Reader Survey

In our effort to make ***TechNotes*** an even more valuable resource to you, we want your thoughts about it. Please take a minute to fill in the following questions, and return it to us in the postage-paid return envelope. Share with us your comments so that we may keep ***TechNotes*** in tune with your needs. Thank you.

==========

1. Which of the following statements best describes your *overall feeling* about ***TechNotes***?

   Excellent, almost always has useful information for me. ____
   Good, frequently has useful information for me. ____
   Average, occasionally has useful information for me. ____
   Fair, seldom has useful information for me. ____
   Poor, almost never has useful information for me. ____

2. Which Ashton-Tate product(s) do you use one or more times a week? (Check all that apply.) ____None

   ____ dBASE II ____ dBASE III ____ Developer's Release
   ____ dBASE III PLUS ____ Framework ____ Framework II

3. How long have you used Ashton-Tate products? ____ yrs ____ mos.

4. How long have you subscribed to ***TechNotes***? ____ yrs ____ mos.

5. Do you keep your back issues of ***TechNotes***? ____ Yes ____ No

6. How many people, *besides you*, read your copy of ***TechNotes***?____

7. Please rank from 1 to 9 the following types of information in order of their *usefulness to you*. (1 is most useful, 9 is least useful.)

   ____ Technical Articles ____ Anomalies
   ____ Application Articles ____ On-Line Services
   ____ Letters from users ____ Sample Programs
   ____ Usage Tips ____ Update Policies
   ____ ***TechNotes*** Index
   ____Your Choice _____

8. When you have a technical question or problem related to Ashton-Tate products, what do you do *first*?

   ____ Call Software Support
   ____ Read ***TechNotes***
   ____ Connect to On-Line Services (CompuServe, The Source, etc.)
   ____ Read the documentation
   ____ Call a knowledgeable friend
   ____ Other _____

9. Which MultiMate® product(s) do you use? (Check all that apply.)

   ____ None ____ On-File™
   ____ MultiMate Advantage™ ____ GraphLink™
   ____ MultiMate 3.3 Series ____ Business Advantage™ Keyboard
   ____ MultiMate Executive™ ____ Business Advantage Communications
   ____ Just Write™ Board

10. Would you like to see topics about MultiMate software covered in ***TechNotes***? ___ Yes ___ No

    If yes, what topics?

    1._____

    2._____

11. Would you like to see *advertisements* in ***TechNotes*** on products and services related to Ashton-Tate products? ___ Yes ___ No

    If yes, what products or services would you like to see advertised?

    1._____

    2._____

    If no, why not?_____

    _____

12. Would you like to see *case studies* in ***TechNotes*** on how Ashton-Tate software is being used to solve business problems? ___ Yes ___ No

    If yes, do you have a suggestion for a case study?

    _____

13. Which of the following would you like to see expanded in coverage and which reduced in coverage in ***TechNotes***?

	Expand	**Reduce**	**Stay as is**
dBASE II	___	___	___
dBASE III	___	___	___
Developer's Release	___	___	___
dBASE III PLUS	___	___	___
Framework 1.x	___	___	___
Framework II	___	___	___
Usage Tips	___	___	___
Anomalies	___	___	___
Letters	___	___	___
Policies	___	___	___
MultiMate	___	___	___

14. What, if any, additional topics would you like to have included in ***TechNotes***, in order of your preference?

    1._____
    2._____
    3._____

15. What is the single thing that you *like most* about ***TechNotes***?

    _____

16. What is the single thing that you *like least* about ***TechNotes***?

    _____

17. What other comments would you like to make regarding any topic?

    _____
    _____
    _____

Thank you for your valuable input.

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Which product(s) do you use? __ **dBASE II** (D2)
__ **dBASE III** (D3)
__ **Framework** (FW)

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CUMULATIVE INDEX

January 1986 through July 1986

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		Jun	25	**Searching, Sorting in dBASE TOOLS for C** *Searching and sorting using C from dBASE III PLUS*
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		Feb	3	**TechNotes Interview with Robert Carr** *Part 2, Framework creator discusses possible plans for the future*
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		Feb	21	**Overview of New Framework II Features** *New options in the Locate, Frames, Graph, and Print pull-down menus*
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Articles

Subject	Product	Issue	Page	Title and Description
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	dBASE III PLUS	Mar	8	**The IIF( ) Function** *Using this new function to format REPORT FORM output*
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SET COLOR	**dBASE III PLUS**	Mar	12	**SET COLOR from a Menu** *A program which generates a menu for color definition*
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		Mar	18	**Variable Tab Stops** *Creating variable tab stops in Framework II*
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		Apr	3	**Telecommunications Primer** *An introduction to hardware and software setup*
		May	3	**Telecommunications Primer—Part Two** *Using Framework II telecommunications to upload/download data*

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Subject	Product	Issue	Page	Title and Description
TELECOMMUNICATIONS	**Framework II**	Jun	16	**Telecommunications Primer-Part Three** *Defining logon macros to automate your telecommunications tasks*
VIEWS	**dBASE III PLUS**	Mar	4	**Understanding Views** *Discussion of views as they enhance relational operations*
WORD FRAMES	**Framework II**	Apr	39	**How to Use Boxes in Word Frames** *A creative way to work with documents*

Anomalies

Product	Entry	Issue	Page	Description
dBASE II	APPEND FROM	Jan	45	*Cautions regarding APPENDing numeric data in v. 2.43**
	COUNT	Feb	43	*In DOS ver. 3.x, COUNT may take longer to execute the second time*
	ERROR MESSAGE	Feb	42	*" 'TO'PHRASE NOT FOUND": Memory variable corruption*
	MEMORY VARIABLES	Feb	42	*Corruption of numeric memory variables in dBASE II, version 2.43**
	RENAME.COM	Feb	43	*This file is not on the RunTime disk, as the manual states*
	RUNTIME	Feb	43	*RENAME.COM is not on the RunTime disk, as the manual states*
	SKIP	Apr	47	*Cannot have a space preceding the argument of the SKIP function*
dBASE III	BROWSE	Jan	45	*Problems using the SEEK option with SET DELETED ON*
	DBRUN.OVL	Jan	46	*This file may not get copied during Developer's Release INSTALL*
	ERROR MESSAGE	Jan	46	*"Record is out of range": trying to GOTO a very large number*
	FIND	Jan	45	*With numeric INDEX, FIND <cstring> will FIND first zero valued record*
	GOTO	Jan	46	*Attempting to GOTO a very large number may lock the computer*
	INDEX	Jan	45	*With numeric INDEX, FIND <cstring> will FIND first zero valued record*
	INSTALL	Jan	46	*Developer's Release: INSTALL may not copy DBRUN.OVL*
	PARAMETERS	Jan	46	*Cannot wrap PARAMETERS line with semi-colon*
	RUNTIME+	Jan	46	*DBRUN.OVL may not get copied during Developer's Release INSTALL*
	SEEK	Jan	45	*Problems using the SEEK option in BROWSE with SET DELETED ON*
	SET DELETED ON	Jan	45	*Problems using the SEEK option in BROWSE with SET DELETED ON*
dBASE III PLUS	@...SAY/GET	Apr	48	*Should not use line 0 with SET SCOREBOARD ON*
	CREATE/MODIFY SCREEN	Apr	48	*The <new field> option creates a one-character field*
	CREATE/MODIFY VIEW	Apr	48	*Cannot permanently delete a FILTER in MODIFY VIEW*
		Apr	48	*Can only include files from the current subdirectory*
	ERROR MESSAGE	Apr	48	*"Alias already in use": Accessing another subdirectory with views*

Anomalies

Product	Entry	Issue	Page	Description
dBASE III PLUS	ERROR MESSAGE	Apr	48	*"Record not in index": Using SET CENTURY ON with DTOC() to index file*
	FOUND( )	Apr	48	*Will return .F. if first record is deleted and SET DELETED is on*
	INDEX	Apr	48	*Cannot use SET CENTURY ON with DTOC() to create an index file*
	READKEY( )	Apr	49	*Returns 270 if operation is terminated by Ctrl-End or Ctrl-W*
	SET HELP	May	33	*The full-screen SET command HELP screen is displayed on SET errors*
	SET SCOREBOARD	Apr	47	*Should not address line 0 with SET SCOREBOARD ON*
Framework II	.TCM SETUP FILES	May	34	*Telecommunication setup files with imbedded spaces cause DOS errors*
	@drawgraph	Jun	42	*Multiple lines in a graph title will display graphic characters*
	@run	Jun	42	*@run while Recalc Formula During Printing is ON causes screen flicker*
	@setformula	May	33	*A Return after the comma may hide the formula from view*
	@trace	May	34	*@int and @abs may return incorrect results if @trace is ON*
	DICTIONARY	Jun	42	*An invalid filename for the Personal Dictionary will cause an error*
	EDIT:UNDO	Jul	52	*UNDOing and EDIT FORMULA (F2) accidentally can hang the computer*
	ERROR MESSAGE	Jun	42	*"Personal Dictionary not found. Create a new one and continue? (y/n)"*
	EXTENDED MEMORY	Jul	52	*Problems printing spreadsheets with extended memory and cell overlap*
	TELECOMMUNICATIONS	May	34	*Telecommunication setup files with imbedded spaces cause DOS errors*

Letters

Product	Entry	Issue	Page	Description
dBASE II	CHR( )	Apr	56	*Sending line feeds (without carriage returns) to the printer*
	DATA CORRUPTION	Jun	47	*Corruption of data may occur using any version on a network*
	DATA DISPLAY	Feb	44	*-Old data displaying in a file with zero records*
	INDEX	Jun	48	*INDEXing a character field with a descending numeric field*
	NUMERIC ACCURACY	Jan	49	*Versions prior to 2.43* have 10 digits of numeric accuracy*
	PRINTING	Apr	56	*Sending line feeds (without carriage returns) to the printer*
	REPORT FORM	Jan	48	*Incorrect totals in versions prior to 2.43**
	SED	Mar	44	*Work-around for hard tabs created in SED*
	WANG PC	May	41	*Redefining WANG PC function keys using version 2.41*
dBASE III	BROWSE	Jan	49	*Problems using the SEEK option with SET DELETED ON*
	CHARACTER STRINGS	Mar	46	*Removing preceding blanks from character strings*

Letters

Product	Entry	Issue	Page	Description
dBASE III	CHR( )	Jun	46	*Sending a CHR(12) to a printer resets PROW( ) to zero*
	DATA CORRUPTION	Jun	47	*Corruption of data may occur using version 1.1 on a network*
	ERROR MESSAGE	Jan	48	*"NO FIND": Character index key length must be a multiple of 4*
		Jan	48	*"Internal error, illegal opcode ": Char INDEX must be a multiple of 4*
	FUNCTION KEYS	Jun	48	*Using the semicolon to program the function keys*
	IMPORT/EXPORT	Feb	44	*Transferring data from Lotus 1-2-3 to dBASE III*
	INDEX	Jan	47	*Character INDEX key length must be a multiple of 4*
		Apr	56	*Creating index files in a subdirectory*
		Jun	48	*INDEXing a character field with a descending numeric field*
	INSTALL	Jan	48	*Problems with Tallgrass: set Duplicate Directories OFF*
	LABEL FORM	Mar	45	*Using two database files with LABEL FORM*
	LOTUS	Feb	44	*Transferring data from Lotus 1-2-3 to dBASE III*
	REPORT FORM	May	40	*Right-justifying character fields with the TRIM( ) function*
	SED	Mar	44	*Work-around for hard tabs created in SED*
	SEEK	Jan	49	*Problems using the SEEK option in BROWSE with SET DELETED ON*
	SET	Jan	49	*Accessing SET parameters from within program control*
	SET DELETED ON	Jan	49	*Problems using the SEEK option in BROWSE with SET DELETED ON*
	SET PATH TO	Apr	56	*Cannot use SET PATH TO to create index files in subdirectories*
	SUBDIRECTORIES	Apr	56	*Creating index files in a subdirectory*
	TALLGRASS	Jan	48	*Problems INSTALLing: set duplicate directories OFF*
	TRIM( )	May	40	*Right-justifying character fields with the TRIM( ) function*
dBASE III PLUS	@...SAY...GET	Jul	66	*Forced-choice response into a memory variable*
	IIF( )	Apr	57	*Using IIF( ) for conditional indexing*
	INDEX	Jul	66	*Using IIF( ) as an index key*
	LTRIM( )	May	41	*Indexing on a date and time field*
		Mar	45	*This function removes preceding blanks from character strings*
	RELATION	Jul	67	*Relating multiple database files together to access over 128 fields*
Framework II	@date1	May	40	*Bolding the system date in a header using @hl and Ctrl-W*
	@hl	May	40	*Bolding the system date in a header using @date1 and Ctrl-W*
	ASSEMBLY LANGUAGE	Mar	46	*Using Framework II word processor to write assembly language programs*
	IMPORT	Apr	55	*How to import Lotus 1-2-3 Release 2 files*
	LOTUS 1-2-3	Apr	55	*How to import Lotus 1-2-3 Release 2 files*
	MEMORY-RESIDENT	Feb	45	*May have problems using memory-resident programs with Framework*
		Jul	68	*Running memory resident utilities such as Sidekick or TimeFrame*
	NOVELL NETWORK	Jun	47	*Unable to correctly find the network disk drives on a Novell Network*
	TEXT FRAME	Mar	46	*A containing frame can hold more than one 64K text frame*

On-Line Services

Product	Entry	Issue	Page	Description
dBASE II	RESIDENT EDITORS	Jun	52	*Using memory resident text editors to edit programs may cause errors*
	SET FORMAT	May	12	*Transfering files from Perfect Filer*
dBASE III	DUPLICATE ENTRIES	Jun	53	*Checking for duplicate entries during data entry*
	EOF( )	Jun	54	*Encountering an end-of-file error after a SKIP*
	ERROR MESSAGE	Jun	54	*"End of file encountered."*
	MEMO FIELDS	Jun	55	*Creating a new memo file after loosing the original .DBT file*
	PRINTING	Jun	54	*Setting the configuration of the printer correctly before printing*
	READ	Jun	54	*Encountering an end-of-file error after a SKIP*
	SKIP	Jun	54	*Encountering an end-of-file error after a SKIP*
dBASE III PLUS	ASSIST	Jun	55	*Modifying CONFIG.DB to suppress ASSIST from loading*
	CATALOG	Jul	56	*Limitations of the CATALOG feature*
	CONFIG.DB	Jun	55	*Modifying CONFIG.DB to suppress ASSIST from loading*
	COPY PROTECTION	Jun	52	*Install and uninstall using the same System Disk #1*
		Jun	55	*Install and uninstall using the same System Disk #1*
	GRAPHIC BOARDS	Jun	55	*Using the SIGMA 400 graphics board will hang the computer*
	INDEX	Jun	54	*SETting the ODOMETER does not affect the percentage during an INDEX*
		May	13	*The index key length problem is corrected in PLUS*
	LABELS	Jul	56	*Using the IIF( ) function to print out labels*
	LEADING ZEROS	May	12	*Converting a numeric field to a character field for INDEXing*
	MEMO FIELDS	Jul	58	*Using ? to display memo field to an ALTERNATE file to strip out spaces*
	NETWORK	May	12	*Network commands are ignored in the Sampler*
	NUMERIC VARIABLES	May	12	*Converting a numeric field to a character field for INDEXing*
	REPORT FORM	Jul	57	*Using the semicolon in a REPORT FORM to return to a new line*
	REPORTING	May	13	*Using the TRANSFORM( ) function to print reports*
	SEEK	Jul	57	*Indexing with UPPER( ) to make SEEKing easier*
	SET FILTER TO	May	11	*Using SET FILTER TO and SET RELATION TO together*
	SET ODOMETER TO	Jun	54	*SETting the ODOMETER to display percentages*
	SET RELATION TO	May	11	*Using SET FILTER TO and SET RELATION TO together*
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	TRANSFORM( )	May	13	*Using the TRANSFORM( ) function to print reports*
dBASE III PLUS ADMINISTRATOR	LOCKING	Jun	54	*Record locking is not implicit in the Administrator*
Framework II	@scan	May	9	*Using the @scan formula to filter a database*
	CONTROL CHARACTERS	May	8	*Sending control characters during telecommunication*
		May	8	*Filtering timing characters during telecommunication*
	CONTROL CODES	Jun	51	*Using the ALT key with the numeric keypad to embed control codes*

On-Line Services

Product	Entry	Issue	Page	Description
Framework II	DICTIONARY	Jul	54	*Additions to the personal dictionary are automatic*
	EXTENDED MEMORY	Jul	55	*Using the RamPage and DESQview with extended memory*
	FILTERING	May	9	*Using the @scan formula to filter a database*
	IBM COLOR DISPLAY	Jun	50	*Color will display only if the correct screen driver is installed*
	IBM COLOR GRAPHICS	Jun	50	*Can display foreground color only using the IBM CGA*
	IBM EGA	May	10	*Setting up the right screen driver for the IBM EGA*
	MAILMERGE	Jul	56	*Using a database in conjunction with user input for billing*
	MOUSE	May	10	*Using a mouse*
	NOVELL NETWORK	Jul	53	*Using the MAP command to assign network drives to Framework II*
	OUTLINE	Jul	55	*Closing frames in an outline that are not to be printed*
	PRINTING	Jul	55	*Printing spreadsheets using Sideline*
	SCREEN DRIVERS	May	10	*Setting up the correct screen driver for the IBM EGA*
	TELECOMMUNICATIONS	Jun	51	*Waiting for trap characters in Telecommunications*
	TERMINAL EMULATION	May	9	*Using terminal emulation during telecommunication*
Other	COMMAND.COM	Jun	51	*COMMAND.COM must be in the root directory for the computer to boot*

Sample Programs

Product	Entry	Issue	Page	Description
dBASE II	CSEED2.PRG	Jan	17	*Program to create a seed value for random number generation*
	EVAL2.PRG	Jan	22	*Calculates the standard deviation and mean value of random numbers*
	HEC-DEC.CMD/PRG	Feb	18	*Converts hex program into a dBASE II POKE sequence*
	LEADZERO.PRG	Feb	20	*Program to replace leading blanks with zeros*
	MODSTUC.PRG	Jan	10	*Program to emulate MODIFY STRUCTURE*
	RANDOM2.PRG	Jan	18	*Program to generate a random number*
	WINNERS.PRG	Jan	20	*Program to select random winners from a database file*
dBASE III	BUBSORT.PRG	Jun	30	*Performs a bubble sort on an array passed as a parameter (dBASE TOOLS FOR C)*
	CBINARY.PRG	Jun	27	*Uses dBASE TOOLS FOR C to implement a binary search using arrays*
	COMPARE.PRG	Jun	28	*Uses dBASE TOOLS FOR C to compare two adjacent array elements*
	CSEED3.PRG	Jan	19	*Program to create a seed value for random number generation*
	DECRYPT.PRG	Feb	33	*Data decryption program for dBASE III*
	ENCRYPT.PRG	Feb	31	*Data encryption program for dBASE III*
	EVAL3.PRG	Jan	23	*Calculates the standard deviation and mean value of random numbers*
	EXCHANGE.PRG	Jun	29	*Uses dBASE TOOLS FOR C to exchange the values of two array elements*
	FILEPROC.PRG	Mar	22	*Procedure file prints program listings*
	PRGPRINT.PRG	Mar	21	*Program to display menu selection for print program listings*

Sample Programs

Product	Entry	Issue	Page	Description
dBASE III	RANDOM3.PRG	Jan	20	*Program to generate a random number*
dBASE III PLUS	COLOR.PRG	Mar	12	*Program to SET COLOR from a menu in dBASE III PLUS*
	CPDELIM.PRG	May	28	*COPY a comma separated file without delimiters*
	DATABASE.PRG	Apr	28	*Maintain files in the Catalog management application*
	DISPLAY.PRG	Apr	30	*Program to manipulate data in the Catalog*
	ERR.PRG	Apr	32	*Program to handle errors in the Catalog management application*
	FREEARRAY.PRC	Apr	16	*Procedure to remove an array from memory*
	LIST.PRG	May	25	*Lists a screen and prompts for a screen dump to the printer*
	LISTFORM.PRG	Apr	23	*Program to list a database file in a vertical form*
	LISTHIST.PRG	Feb	8	*Program to LIST HISTORY to a file in dBASE III PLUS*
	LOADARRAY.PRC	Apr	14	*Procedure to load an array from a database file*
	MAIN.PRG	Apr	27	*Main driver program for the Catalog management application*
	MAKEARRAY.PRC	Apr	12	*Procedure to create a new array*
	NEWPAGE.PRG	Apr	25	*Program to print page top called from Listform.PRG*
	OPTION.PRG	Apr	29	*Program to allow access to index files and queries in the Catalog*
	PAGETOP.PRG	Jul	8	*Prints the page and column headings for Sales Report.*
	REMOVE.PRG	Jun	34	*Removes any set of characters from within a target string*
	SALES.PRG	Jul	7	*Prints a two-level grouped report*
	SAVESTRU.PRG	Jun	23	*Creates a library of database file structures of the current directory*
	SEEKARRAY.PRC	Apr	15	*Procedure to find an element within a defined array*
	VIEW.PRG	Feb	12	*Program to toggle between table view and form view*
	WRAP.PRG	Apr	24	*Program to wrap long strings, called from Listform.PRG*
Framework II	ALT-B (BOX MACRO)	Apr	39	*Macro to draw boxes in word frames*
	CALCSIZE	Jul	47	*A macro to calculate the overall width of a spreadsheet*
	DATA TABLE	Feb	35	*Program to create data tables in Framework II*
	ELAPSED_TIME	Jul	46	*A macro to determine elapsed time between a start and end date or time*
	HEX	Apr	37	*FRED function to convert a decimal number to hex*
	LABELPGM	Mar	14	*Program to automate mailing labels*
	LSTRING	Jan	25	*Function to extract the left portion of a character string*
	MID STRING	Jan	31	*Macro to extract the mid portion of a string in word frames*
	NAMED RANGES	Jul	45	*Creates a named range to be used in Framework II programs*
	PFS TRANSFER	Mar	37	*Program to transfer files from pfs:file to Framework II*
	RSTRING	Jan	26	*Function to extract the right portion of a character string*
	RUNDBASE	Mar	27	*Running dBASE from within Framework II*
	STRING FUNCTIONS	Jan	24	*User-defined string functions used in spreadsheet and database frames*
	SYM_TO_FW	Jul	26	*Symphony to Framework II translation program*
	TABSTOP	Mar	18	*Macro for putting variable tab stops into word frames*
	TABSTRIP	Jan	33	*Program to remove tabs from a word frame*
	WORD CHECK	Jul	48	*A macro to check the spelling of a word or phrase*

Sample Programs

Product	Entry	Issue	Page	Description
Other	CHOOSE.COM	Mar	33	*An assembly language routine used to choose menu options with MENU.BAT*
	MENU.BAT	Mar	32	*DOS batch file is controlling program for front-end menu system*
	MENU.DAT	Mar	33	*DOS batch file, called from MENU.BAT, displays menu screen*

Usage Tips

Product	Entry	Issue	Page	Description
dBASE II	@...SAY	Jan	37	*Patches to access line 24 with @...SAY in versions 2.4 or higher*
		Jan	37	*"@ row,column SAY ERASE" only clears one line in CP/M-80 formats*
	DEBUG	Jan	37	*Patches to access line 24 with @...SAY in versions 2.4 and higher*
	NUMERIC VARIABLES	Mar	40	*How to left-justify numeric variables*
	SUBDIRECTORIES	Mar	39	*Using logical drive designators as subdirectories with DOS 3.1*
dBASE III	ASSIST	Mar	40	*Commands executed in ASSIST can be recorded in HISTORY*
	COPY	Jan	38	*Method to COPY fields from one database file to another*
	DELETE	Jan	39	*Deleting records based on values in a related database file*
	SET PATH TO	Jan	40	*If SAFETY is ON, some commands will search the path before writing to disk*
	SET SAFETY ON/OFF	Jan	40	*If ON, some commands will search the path before writing to disk*
Developer's Release	DBRUN.COM	Jan	40	*This file, not DBRUN.EXE, should be renamed as per the documentation*
	DBRUN.EXE	Jan	40	*This hidden file will not show up with DIR and cannot be renamed*
	READ	Jan	40	*In Developer's Release, a READ must have active GETs*
		Jan	40	*Cannot issue a READ from within HISTORY in Developer's Release*
	REINDEX	Jan	40	*Must reissue the SET ORDER TO command if you REINDEX*
	SET ORDER TO	Jan	40	*Use REINDEX to SET ORDER TO its original state*
dBASE III PLUS	43-Line Mode on EGA	May	27	*Toggling the IBM Enhanced Graphics Adapter's 43-line display mode*
	@...SAY	Apr	42	*Control codes are counted as characters but not sent to the printer*
	@...SAY/GET	May	27	*Large SCOREBOARD area conflicts with @...SAY/GET to line 0*
	ACCESS DISK	Apr	42	*Disk manufacturing error affected products with certain serial numbers*
	APPEND FROM	May	27	*Files without delimiters will be correctly APPENDed*
	ASSIST	Apr	43	*Building search conditions with date fields*
		Apr	43	*Cannot build a search condition for blank spaces*

Usage Tips

Product	Entry	Issue	Page	Description
dBASE III PLUS	CASE	Apr	43	*Omission of DO CASE or ENDCASE in a CASE structure affects commands*
	CHARACTER STRINGS	Jun	33	*Removing characters from a field or memory variable*
	CONFIG.DB	Apr	44	*Using the keyword COMMAND in CONFIG.DB will alter the initial sign-on*
	CONTROL CODES	Apr	42	*Control codes to the printer with @...SAYs are counted as character*
	COPY STRUCTURE	May	28	*Recreating a file structure with COPY STRUCTURE EXTENDED*
	COPY TO [DELIMITED]	May	28	*COPY a comma separated text file without delimiters*
	CREATE FROM	May	28	*CREATE a new file from another containing the structure as records*
		Jul	41	*Using the CREATE FROM command to create a database file from another*
	CREATE SCREEN	Jun	32	*Using double quotation marks will cause an error*
	CTOD( )	Apr	43	*Non-date entries are accepted as arguments in ASSIST*
	DATE FIELDS	Apr	43	*Building search conditions with date fields in ASSIST*
	DO WHILE	Apr	44	*DO WHILE EOF()=.T. returns "Invalid Operator"*
	DOT PROMT	Apr	44	*The command line now scrolls, eliminating the need for a semi-colon*
	ERROR MESSAGE	Apr	44	*"Invalid Operator": Results from improper syntax of DO WHILE statement*
		Jun	32	*"Unrecognized phrase/keyword in command": results from using (")*
		Jun	32	*"Variable not found": results from using "-" in a filename*
		Jun	33	*"Invalid operation on a memo field": results from executing JOIN*
		Jun	33	*"Memo file can not be opened": returned when .DBT file is not found*
	FILENAMES	Jun	32	*Database filenames with an embedded dash cannot be used*
		Jul	41	*Accessing filenames with no extensions*
	FOR/WHILE	Jun	34	*Changes made to the REPORT FORM*
	HISTORY	Mar	40	*Commands executed in ASSIST can be recorded in HISTORY*
	IBM EGA	May	27	*Toggling the IBM Enhanced Graphics Adapter's 43-line display mode*
	INPUT	Apr	44	*INPUT does not accept a Return as valid input*
	INTERACTIVE MODE	Apr	44	*Cannot continue dot prompt commands with a semi-colon*
	JOIN	Jun	33	*Specifying a memo field in the FIELDS clause returns an error*
	MODIFY VIEW	Apr	46	*Will return error message if any components of the view have changed*
	PRINTING	Apr	42	*Control codes to the printer with @...SAYs are counted as characters*
		Jun	34	*Changes made to the REPORT FORM*
	PUBLIC	May	30	*Variables SAVEd as PUBLIC will be RESTOREd as PUBLIC*
	REPLACE	May	31	*Using REPLACE to update a many-to-one related database*
		Jul	42	*Using REPLACE to change field contents in other work areas*
	REPORT FORM	Jun	34	*Changes made to the REPORT FORM*

Usage Tips

Product	Entry	Issue	Page	Descripotion
dBASE III PLUS	RESTORE	May	30	*Variables remain PUBLIC once RESTOREd if declared so before a SAVE*
	SAVE TO	May	30	*Variables SAVEd as PUBLIC will be RESTOREd as PUBLIC*
	SET COLOR	May	30	*A table of the default color attributes shows changes from dBASE III*
	SET DATE FRENCH	Apr	45	*This command is now the same as SET DATE BRITISH*
	SET FIELDS TO	Apr	45	*FIELDS TO <field list> automatically SETs FIELDS ON*
	SET ODOMETER TO	Jun	35	*Setting the step count of the percentage display*
	SET ORDER TO	Apr	45	*Must reposition the record pointer after this command*
	SET RELATION TO	May	31	*A syntax error is returned if SET RELATION is used without TO*
	SET SCOREBOARD	Apr	45	*Clears the entire screen*
		May	27	*Using @...SAY to line 0 will not write in the SCOREBOARD area*
	SET STATUS	Apr	45	*Clears the entire screen*
	SET VIEW TO	Apr	46	*Cannot make changes to any component parts of a view*
	SUMMARY	Jun	34	*Changes made to the REPORT FORM*
	UPDATE	May	31	*Using REPLACE to update a many-to-one related database file*
dBASE III PLUS ADMINISTRATOR	BACKUP AND RESTORE	Jul	43	*Using BACKUP and RESTORE on disks that are not copy-protected*
	DEBUGGING	Jul	43	*Debugging commands to assist you during installation problems*
	DOCUMENTATION	Jul	43	*Corrections to reported documentation errors*
	ERROR MESSAGE	Jun	36	*"Network is busy": indicates no more tasks may be accepted by server*
		Jun	36	*"Record is in use by others": returned if RLOCK( ) was used by another*
		Jun	38	*"Syntax Error": generated by inappropriately using SET PRINTER TO*
		Jul	42	*"File is in use by another": Attempting to USE a read-only file*
		Jul	42	*"File is already open": Occurs using MODIFY STRUCTURE on IBM PC-NET*
		Jul	44	*"Record in use by another": Results when LISTing a locked record*
		Jul	44	*"NET 803: Network path not found": MODIFY STRUCTURE on IBM PC-NET*
		Jul	45	*"Record is in use by another": Using FIND with SET DELETED ON*
	GOTO	Jun	36	*Use of locked records by other users with RLOCK( ) will return an error*
	LIST	Jul	44	*LISTing a locked record will display "Record in use by another"*
	MODIFY COMMAND	Jun	37	*Attempting to modify a read-only file will yield inconsistent results*
	MODIFY STRUCTURE	Jul	44	*Generates the error "NET 803: Network path not found" on IBM PC-NET*
	NETWORKS	Jun	36	*A busy network file server may become unreliable*
	PROTECT	Jun	37	*The password entry screen is bypassed if DBSYSTEM.DB is not found*
	RLOCK( )	Jun	36	*A record locked by another user with RLOCK( ) will return an error*
	RUN	Jun	37	*The Novell system closes all open files unless EOJOFF is executed*

Usage Tips

Product	Entry	Issue	Page	Description
dBASE III PLUS ADMINISTRATOR	SET DELETED	Jun	45	*SET DELETED ON with duplicate records can affect the FIND command*
	SET PRINTER TO	Jul	38	*The command SET PRINTER TO SPOOLER is appropriate only to Novell*
	SKIP	Jun	36	*A record locked by another user with RLOCK( ) will return an error*
Framework II	.PAR FILES	Mar	43	*Converting .PAR files to .TCM files*
	.TCM FILES	Mar	43	*Converting .PAR files to .TCM files*
	@if	Jun	38	*Using @select to maintain readability of cascading @if structures*
	@performkeys	Jun	39	*Displaying the keyname of the last key pressed*
	@select	Jun	38	*Using @select to maintain readability of cascading @if structures*
	@sum	Mar	42	*Cannot remove the last column/row referenced by @sum*
	@time	Jan	42	*Displaying times with the Numbers pull-down menu*
	@trace	Jul	50	*A macro to turn TRACE on and off*
	@writetextfile	Jun	40	*The correct way to use variables with @writetextfile*
	APPS MENU	Mar	43	*Some Print Output Options have no effect on Mailmerge or Print Labels*
	CONDENSED PRINT	May	32	*Condensed Print takes precedence over Near Letter Quality on LQ1500*
	COPYING	Jun	40	*Copying the source information of multiple columns is not allowed*
	DELETING SPACES	Jul	49	*Using hard spaces to delete spaces as words*
	DICTIONARY	Mar	42	*May take a long time to save the personal dictionary the first time*
	DOS ACCESS	Jun	41	*The DOS Access screen will clear if ANSI.SYS is used as a device*
	DOW JONES	Mar	42	*Copying fractions from text into spreadsheets*
	ELAPSED TIME	Jul	46	*A function to calculate elapsed time accurately*
	EPSON LQ1500	May	32	*Condensed Print takes precedence over Near Letter Quality*
	ERROR MESSAGE	Jun	40	*Unexpected limitations printing graphs when using an EPSON LQ1500*
		Jun	40	*"Frame too large to be printed": results from sizing a graph to large*
	EXTENDED MEMORY	Mar	42	*Memory requirements for extended memory*
	FRACTIONS	Mar	42	*Copying fractions from text into spreadsheets*
	GRAPHING	Jun	40	*Unexpected limitations printing graphs when using an EPSON LQ1500*
	IBM 3270t	Jan	44	*This screen driver is found under "All Other IBM Drivers" in SETUP*
	IMPORT	Mar	41	*Importing Framework 1.x files to Framework II*
	IMPORT/EXPORT	May	32	*Procedure to correctly transfer Lotus files*
	LABELS	Mar	43	*Some Print Output Options have no effect on Mailmerge or Print Labels*
	LOTUS	May	32	*Procedure to correctly transfer Lotus files*
	MAILMERGE	Mar	43	*Some Print Output Options have no effect on Mailmerge or Print Labels*
		Jul	49	*Right-justifying numbers for use with a mailmerge*
	PAR FILES	Jan	44	*How to read .PAR files from Framework into Framework II*
	PRINTING	Mar	41	*How to print subscripts and superscripts*

Usage Tips

Product	Entry	Issue	Page	Description
Framework II	PRINTING	Mar	43	*Some Print Output Options have no effect on Mailmerge or Print Labels*
	PROTECT FROM EDITING	May	32	*Empty spreadsheet cells cannot be protected until they contain data*
	RANGES	Jul	45	*Creating a Library macro to use named ranges in FRED programs*
	RUNNING DBASE	Jun	41	*Modifying RUNDBASE.FW2 to allow dBASE III to be run from a hard disk*
	SETUP	Jan	42	*Selecting screen color parameters in SETUP*
	SIZING COLUMNS	Mar	42	*Changing several spreadsheet or database columns at once*
	SPELL CHECKER	Jul	48	*A function to spell check a word without interrupting your work*
	SPREADSHEETS	Mar	42	*Copying fractions from text into spreadsheets*
		Jul	47	*A function to calculate the overall width of a spreadsheet*
	SUBSCRIPTS	Mar	41	*How to print subscripts and superscripts from Framework II*
	SUPERSCRIPTS	Mar	41	*How to print subscripts and superscripts from Framework II*
	TELECOMMUNICATIONS	Mar	43	*Converting .PAR files to .TCM files*
		Jul	48	*Setting the Telecomm parameters for Point and Dial*
	TEXT	Mar	42	*Copying fractions from text into spreadsheets*
	VIRTUAL MEMORY	Mar	41	*Cannot use virtual memory to import Framework 1.x files*

Miscellaneous

Subject	Issue	Page	Description
CORRIGENDA	Jan	36	Corrections to September, November, and December issues
	Feb	27	Corrections to the March 1985 issue
	Mar	3	Corrections to the July 1985, October 1985, and December 1985 issues
	Apr	53	Corrections to the December 1985 issue
	May	7	Corrections to the March 1986 issue
	Jul	51	Corrections to the July 1985 issue
INTERNATIONAL	Jul	64	International Support - List of international subsidiary offices
MULTIMATE	Apr	50	Features of MultiMate Advantage update (version 3.60)
	Apr	52	Where to look when you have technical difficulties
	Apr	52	About MultiMate Technical Support—Supported products, when to call
	Apr	53	Customer Service versus Technical Support
	May	36	Listing and description of communications boards from MultiMate
	Jun	43	MultiMate version 3.30 printer of the month - HP Thinkjet
	Jun	43	MultiMate printers of the month (HP)
	Jun	44	MultiMate version 3.30 printer of the month - HP Laserjet
	Jul	59	MultiMate Magic - Technical tidbits in response to "WHAT IF" situations
	Jul	62	MultiMate PC Questions - Commonly asked questions about MultiMate
NEW PRODUCTS	May	37	Expanded products line from Multimate for the IBM PC family
ON-LINE SUPPORT	Jan	3	Information pertaining to CompuServe, The Source, and Onepoint
SUBSIDIARY OFFICES	Jan	56	List of Ashton-Tate international subsidiary offices
SUPERLoK	Jul	28	Technical information about SUPERLoK, the copy-protection scheme
TRAINING CENTERS	Jan	54	Listing of Ashton-Tate Authorized Training Centers
	Mar	47	Listing of Ashton-Tate Authorized Training Centers

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